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BENJAMIN J. CAYETANO
GOVERNOR

August 20, 2001

TO: The Honorable Brian K. Minaai, Director
Department of Transportation
State of Hawaii

SUBJECT: Acceptance of the Final Environmental Impact Statement
Hawaii Commercial Harbors 2020 Master Plan

With this memorandum, I accept the Final Environmental Impact Statement for Hawaii Commercial Harbors 2020 Master Plan, the island of Oahu, as satisfactory fulfillment of the requirements of Chapter 343, Hawaii Revised Statutes. The economic, social and environmental impacts, which will likely occur should this project be implemented, are adequately described in the statement. The analysis, together with the comments made by reviewers, provides useful information to policymakers and the public.

My acceptance of the statement is an affirmation of the adequacy of that statement under the applicable laws but does not constitute an endorsement of the proposed action.

I find that the mitigation measures proposed in the environmental impact statement will minimize the negative impacts of the project. Therefore, if this project is implemented, the Department of Transportation and/or its agents should perform these or alternative and at least equally effective mitigation measures at the discretion of the permitting agencies. The mitigation measures identified in the environmental impact statement are listed in the attached document.


BENJAMIN J. CAYETANO

Attachment

c: Honorable Bruce S. Anderson, Ph.D., M.P.H.
✓ Office of Environmental Quality Control

July 2001 FEIS
Hawaii Commercial Harbors
2020 Master Plan

AUG 8 2001

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FINAL ENVIRONMENTAL IMPACT STATEMENT

for the

**HAWAII COMMERCIAL HARBORS
2020 MASTER PLAN**

Island of Hawaii, Hawaii

Proposing Agency:

State of Hawaii
Department of Transportation
Harbors Division

Accepting Authority:

Office of the Governor, State of Hawaii

Prepared by:

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Honolulu, Hawaii 96817-4941
RMTC Job No. 18844-OE

July 2001

Office of Environmental Quality Control
235 S. Beretania #702
Honolulu HI 96813
586-4185

DATE DUE

JULY 11 - 2003

Dec 15 2004

**HARBORS DIVISION
DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII**

**FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE
HAWAII COMMERCIAL HARBORS
2020 MASTER PLAN
ISLAND OF HAWAII, HAWAII**

**TMK:
Hilo Harbor: 2-1-07; 2-1-09
Kawaihae Harbor: 6-1-03**

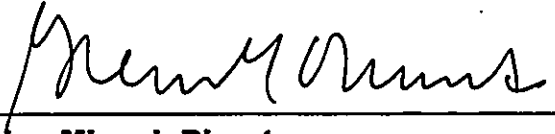
**This Environmental Document is Submitted
Pursuant to Chapter 343, Hawaii Revised Statutes**

**PROPOSING AGENCY:
Department of Transportation
State of Hawaii**

**ACCEPTING AUTHORITY:
Governor, State of Hawaii**

"This statement and all ancillary documents were prepared under my direction and, to the best of my knowledge, address the content requirements as set forth in HAR 11-200-17 and 11-200-18, as appropriate."

Signed:



**Brian Minaai, Director
State of Hawaii
Department of Transportation**

JUL 24 2001

Date

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CHAPTER 1

INTRODUCTION AND PROJECT SUMMARY

1.1 INTRODUCTION

1.1.1 Introduction to Commercial Harbors

Hawaii's commercial harbors develop, manage and promote the flow of waterborne commerce throughout the State. Over 98% of all imported goods enter through these gateways. Commercial harbors also are important catalysts for economic growth.

The State of Hawaii, Department of Transportation, Harbors Division (hereafter Harbors Division) is responsible for the control, management, use and regulation of deep-draft commercial harbors and their improvements (Hawaii Revised Statutes, Chapter 266). Harbors Division's jurisdiction is to provide: 1) essential infrastructure for the movement of cargo, passenger and fishing vessels entering, leaving, or traveling within the State of Hawaii, and 2) the facilities and supporting services for loading, offloading and handling of these vessels, their cargo and passengers.

Commercial harbors handle a variety of cargo:

- *Bulk* (loose) cargo, including *liquid bulk* cargo like petroleum and *dry bulk* cargo such as cement mix;
- *Breakbulk* cargo in packages such as bundles, crates, barrels, and pallets; and
- *General cargo* like automobiles or materials packed in steel boxes called containers. (American Association of Port Authorities (AAPA), 2000b).

Commercial harbor users in Hawaii range from major cargo carriers such as Matson and Young Brothers to commercial fishermen and charter boat operators with a single vessel. Other operations such as cement distribution also take place on harbor lands.

For definitions of harbor-related terms used in this EIS see CHAPTER 11, GLOSSARY. For definitions of acronyms, see CHAPTER 12, ACRONYM LIST.

1.1.2 Hawaii Commercial Harbors 2020 Master Plan

The State of Hawaii [must] develops long-range plans for commercial harbor facilities to meet increasing demand for cargo and cruise ships. The Hawaii Commercial Harbors 2020 Master Plan (hereafter 2020 Master Plan) is a conceptual land use plan proposing facility development over the next 20 years at the two deep-draft harbors on the Island of Hawaii, Hilo Harbor and Kawaihae Harbor.

The 2020 Master Plan was developed collaboratively by the Harbors Division and two User Groups – one for each harbor – who provided input based on their experience with harbor operations and knowledge of anticipated harbor trends. The User Groups included maritime industry representatives, petroleum firms, interisland and overseas cargo carriers, a cement firm, timber harvesting operations, stevedores, cruise ship agents, commercial fishing operations and electric power generation firms. CHAPTER 7 contains a list of participating organizations and individuals as well as a description of the groups' involvement in developing the 2020 Master Plan.

The following objectives for the 2020 Master Plan were developed and agreed to by the User Groups.

- Facilitate maritime shipments of essential commodities.
- Optimize use of harbor lands and water resources.
- Plan facility development that serves Hawaii's port system in an efficient, safe and secure manner.
- Minimize the impacts of the 2020 Master Plan on environmental quality and recreational and cultural activities bordering Hilo Harbor and Kawaihae Harbor.

The 2020 Master Plan is designed to be flexible and adapt to changing conditions. It will be updated approximately every five years.

1.2 SCOPE AND AUTHORITY

This Environmental Impact Statement (EIS) has been prepared pursuant to Hawaii Revised Statutes, Chapter 343, and Title 11, Chapter 200 (Department of Health), of the Hawaii Administrative Rules. The requirement for this EIS is triggered by three of the eight conditions which stipulate the preparation of an Environmental Impact Statement: 1) use of State or County lands or funds; 2) use within Conservation District Lands; and 3) use within the shoreline setback area.

The purpose of this EIS is to address the potential for environmental impacts associated with the planned improvements through the year 2020 at Hilo Harbor and Kawaihae Harbor, as expressed in the 2020 Master Plan. *The Environmental Impact Statement Preparation Notice for the 2020 Master Plan was published in The Environmental Notice of the State Office of Environmental Quality Control on November 8, 2000. The Draft Environmental Impact Statement (DEIS) was published on March 2001. The Public Comment Period for the DEIS extended from March 8, 2001 to April 23, 2001.*

Statements in this Final Environmental Impact Statement that have been added since the Draft Environmental Impact Statement are indicated in bold italics. Statements that have

been deleted are enclosed in brackets [].

1.3 PROJECT SUMMARY

TABLE 1 provides a summary of the project including proposed harbor improvements.

TABLE 1
Project Summary

PROJECT	Hawaii Commercial Harbors 2020 Master Plan Improvements
PROPOSED ACTION	The State of Hawaii, Department of Transportation - Harbors Division (Harbors Division) proposes to implement harbor improvements at Hilo Harbor and Kawaihae Harbor when state funding becomes available, beginning in 2002. The proposed action is presented in Harbors Division's <u>Hawaii Commercial Harbors 2020 Master Plan, 1998</u> .
PROPOSING AGENCY	State of Hawaii Department of Transportation Harbors Division 79 South Nimitz Highway Honolulu, Hawaii 96813 Contact Person: Thomas Fujikawa, Harbors Administrator
ACCEPTING AUTHORITY	Governor, State of Hawaii
EIS PREPARER	R. M. Towill Corporation 420 Waiakamilo Road, Suite 411 Honolulu, Hawaii 96817-4941 Contact Person: Chester T. Koga, AICP
LOCATION	Hilo Harbor, Waiakea, South Hilo, Island of Hawaii Kawaihae Harbor, Kawaihae, South Kohala, Island of Hawaii
LAND OWNERSHIP	State of Hawaii

Tax Map Keys:

Hilo Harbor: 2-1-07; 2-1-09
Kawaihae Harbor: 6-1-03

EXISTING LAND USES

Hilo Harbor: Commercial harbor uses include berthing and loading/unloading of ships, barges and small boats; berthing of passenger cruise ships; and dry and liquid bulk cargo operations. Other uses of the commercial harbor include recreational fishing.

Kawaihae Harbor: Commercial harbor uses include berthing and loading/unloading of ships and barges; mooring of small boats; and dry and liquid bulk storage. Other uses of the commercial harbor include recreational fishing; swimming; outrigger canoe paddling; and outdoor education.

PROPOSED USES

Hilo Harbor: Dolphins at Piers 2 and 3; interim passenger terminal (renovation of existing shed) at Pier 1; dry bulk cargo staging area; interisland cargo terminal at proposed Pier 4; overseas container terminal at Pier 1; passenger terminal at proposed Pier 5; ocean research facility at proposed Pier 6; cargo, passenger and research vessel berths for Pier 3 and proposed Piers 4, 5 and 6; berths for commercial fishing, Coast Guard, visiting and research boats; access roadways.

Kawaihae Harbor: Liquid bulk cargo terminal; dry bulk terminals at Pier 1; interisland cargo terminal at proposed Piers 3-4; overseas container terminal at Pier 2A; passenger terminal and ocean research facility; cargo and military berths for Piers 1, 2A, 2B and proposed Piers 3, 4 and 5; military cargo terminal, proposed Pier 5; access roadways.

LAND AREA

Hilo Harbor: 43 acres of fast land
Kawaihae Harbor: 113 acres of fast land

STATE LAND USE CLASSIFICATION

Hilo Harbor: Urban
Kawaihae Harbor: Urban and Conservation

DEVELOPMENT PLAN LAND USE

Not applicable

COUNTY ZONING Hilo Harbor: MG-1A and Open
 Kawaihae Harbor: MG-1A; Open/RM-1.5 and Open

SPECIAL DISTRICTS Not applicable

COUNTY OF HAWAII Hilo Harbor: Industrial
LAND USE Kawaihae Harbor: Industrial / Open
DESIGNATIONS
(General Plan)

1.4 SIGNIFICANT BENEFICIAL AND ADVERSE IMPACTS AND PROPOSED MITIGATION MEASURES

Significant beneficial impacts of proposed harbor development include the provision of critical commercial harbor infrastructure to accommodate projected increases in shipping, cargo volume and cruise ship arrivals. Overseas and interisland cargo terminals will have adequate capacity to load and offload goods to serve the island's growing businesses and population. Cruise ships will have adequate berthing and passenger accommodations at the island's two commercial harbors. Liquid bulk materials, e.g. petroleum products, will be offloaded and stored at Kawaihae Harbor to serve West Hawaii instead of being trucked across the island from Hilo.

*Adverse impacts of greatest concern are short-term impacts associated with construction of proposed harbor improvements. Short term impacts include temporary increases in turbidity due to pile driving and dredging at both subject harbors. These will be mitigated by the use of siltation curtains, which will also protect the threatened green sea turtle (*Chelonia midas*) from injury. At Kawaihae Harbor, the coral reef area along the harbor side of the breakwater remaining after previous dredgings will be protected from construction-related turbidity by the siltation curtain method. In addition, pier construction will be planned for periods in which coral in the reef area is not reproducing.*

Water quality impacts will be mitigated by the development and implementation of erosion, sedimentation and turbidity control measures. Unavoidable but temporary noise and vibration impacts may occur during the construction of the proposed harbor improvement projects. Underwater blasting may be necessary to achieve the required dredging depths. Harbors Division will explore the feasibility of using other technologies as an alternative to blasting, such as the use of cutterheads, drag line operations or roadcutters, to dredge

designated areas. Other alternatives to blasting, such as technology using pre-drilling and expansion gels to split rock, will also be considered. Construction methodology will attempt to minimize the possibility of inadvertent taking of any green sea turtles.

Alien marine species introductions are a concern at both harbors. Harbors Division will cooperate with regulatory agencies responsible for regulation of alien species introductions. Longer-term impacts include increased risk of liquid bulk spills at Kawaihae Harbor and which will be mitigated by strict adherence to containment design and regulations. Increased traffic at Hilo Harbor and Kawaihae Harbor is anticipated due to cargo and cruise ship operations. Traffic impacts at both subject harbors will be mitigated by construction of additional access roads into the harbors and implementation of planned regional highway improvements by the Department of Transportation - Highways Division. Finally, recreational opportunities at Kawaihae Harbor will be diminished due to the construction of a pier along part of the coral stockpile coastline.

1.5 ALTERNATIVES CONSIDERED

The no action alternative would mean the existing operations at Hilo Harbor and Kawaihae Harbor would remain unchanged. Harbor operations will become inefficient and unsafe because of spatial constraints. Traffic congestion in the harbors would not be alleviated. Existing vacant areas would remain undeveloped and unutilized for commercial harbor operations. With this alternative, there would be not additional piers, dolphins, terminals or passenger facilities to accommodate the anticipated growth of the State's commercial shipping and cruise ship industries. Current recreational uses of the harbors would be unhampered by new development.

The no action alternative has been rejected from further consideration because 1) the goals of the 2020 Master Plan would not be met; 2) State and County development policies would not be implemented; and 3) there would be anticipated negative economic consequences in the form of lost revenue opportunity 4) importation costs would rise, causing higher cost of goods for consumers. The delayed action alternative was also rejected because the existing harbor facilities, already strained at the present, will not be adequate to handle projected increases in cargo and passenger vessel demand.

The 2020 Master Plan was developed collaboratively by Harbors Division and User Groups of maritime industry representatives, cargo carriers, commercial harbor users, recreational harbor users, government agencies, community groups and individuals. Alternatives considered but rejected for Hilo Harbor included: installation of crane rails, shifting interisland operations to Pier 1, lengthening of Pier 1, transferring jurisdiction for roadways,

constructing a new road parallel to Kanoelehua, fish processing plant and filling in of Radio Bay. Alternatives considered but rejected for Kawaihae Harbor included installation of crane rails, cold storage facilities for agricultural products, bunkering, bulk fiber storage, space for a wood chip mill, veneer plant, wood processing and storage facility, intra/interisland ferry terminal, additional military land, U.S. Coast Guard pier and expansion of the turning basin.

1.6 UNRESOLVED ISSUES

The year-long master planning process with harbor User Groups and EIS consultation process yielded input from harbor users, government agencies, businesses, private interest groups and individuals. Comments were received on the EISPN and the DEIS (see Appendices A-1 and A-2) which provided input on issues and concerns relative to the proposed action.

The issues raised during the consultation program have been resolved in this FEIS, with the exception of the transfer of the Baker's Beach lease lots from the Department of Land and Resources to enable construction of the passenger terminal at proposed Piers 5 and 6.

The Department of Transportation, Harbors Division is aware that additional concerns regarding the proposed development may arise in the future. Therefore, Harbors Division will continue to work with harbor users, government agencies, private interest groups and the public so that project plans meet project objectives and take into consideration the concerns of agencies and the public.

1.7 COMPATIBILITY WITH LAND USE PLANS AND POLICIES

The proposed harbor improvements support existing plans, policies and objectives set forth by the State of Hawaii and the County of Hawaii. The proposed improvements will be compatible with existing land uses in the project areas. Public and private land use plans include harbor development as an infrastructure requirement. Harbor facility improvements will support expected future growth.

1.8 LISTING OF NECESSARY PERMITS AND APPROVALS

Applicable permits and approvals that may be required for the proposed action include the following, in order of application:

- 1. Coastal Zone Management Federal Consistency Certification, issued by the Office of Planning, State Department of Business Economic Development and Tourism*

2. **Section 401 Water Quality Certification, issued by the State Department of Health**
3. **Department of the Army Permit, issued by the U.S. Army Corps of Engineers**
4. **Conservation District Use Permit, issued by the State Department of Land and Natural Resources**
5. **Shore and Shorewaters Permit, issued by the State Department of Land and Natural Resources**
6. **Shoreline Certification, determined by State Department of Accounting and General Services and State Department of Land and Natural Resources**
7. **Historic Preservation and Federal Section 106 Review, by State Department of Land and Natural Resources**
8. **Federal Section 106 Review, Protection of Historic Properties, by the State Department of Land and Natural Resources**
9. **National Pollutant Discharge Elimination System Permit, issued by State Department of Health**
10. **Permit to Construct a Wastewater System, issued by State Department of Health**
11. **Hazardous Waste Permit, issued by State Department of Health**
12. **Non-Covered Source Air Permit, issued by State Department of Health**
13. **Asbestos Regulations, State Department of Health**
14. **State Highways Permit, issued by State Department of Transportation**
15. **Section 103 Marine Protection, Research and Sanctuaries Act, issued by the U.S. Army Corps of Engineers**
16. **Public Lands Dispositions, by State Department of Land and Natural Resources**

CHAPTER 2 PROJECT DESCRIPTION

2.1 PROJECT LOCATION AND HISTORICAL OVERVIEW

The Island of Hawaii is currently served by two deep-draft commercial harbors. **Hilo Harbor** is located at the eastern end of Kihuna Bay on the windward, or eastern coast of the Island of Hawaii. As the island's primary commercial port, Hilo Harbor provides a wide range of maritime activities and services. This harbor also serves as a major distribution center for the island. Both overseas and inter-island ships and barges make regular calls at Hilo Harbor, as well as scheduled passenger cruise ships (SDOT 1993). **Kawaihae Harbor**, the Island of Hawaii's second commercial harbor, lies about 17 miles south of Upolu Point, the northwestern tip of the Island of Hawaii, and 28 miles north of Kona International Airport.

See FIGURE 1 for the location of the two harbors and FIGURES 2 and 3 for neighborhood location maps.

Hilo Harbor. Hilo Bay is a broad indentation in the northeastern coastline of the Island of Hawaii. The beginnings of the present configuration of Hilo Harbor date to construction of the Hilo breakwater in 1908. Originally built of stone quarried from Waiakea and Puna (and later from Waipio Valley), the breakwater was constructed on the inner part of the reef fronting Hilo Bay and was completed in 1929 to its present length of 10,170 ft (3,100 m) (Kelly et al., 1981).

The pier that was originally called Kihuna Wharf was constructed in 1912-16 at the present Pier 1 site. The harbor bottom near the pier was dredged at that time to a depth of 35 feet (approximately 10 meters). Completion of this pier removed most ship loading and unloading activity from the former Railroad Pier and the Government Wharf that had existed near the mouth of Waioa River at Waiakea. Pier 2 was constructed in 1921-23 and Pier 3 in 1926-27. Large areas of the harbor basin were dredged during this period to accommodate approaches to these piers (Kelly et al., 1981).

Kawaihae Harbor. In response to the increasing population of west Hawaii, the Federal government authorized the Kawaihae Harbor Project as part of the Rivers and Harbors Act of 1899.

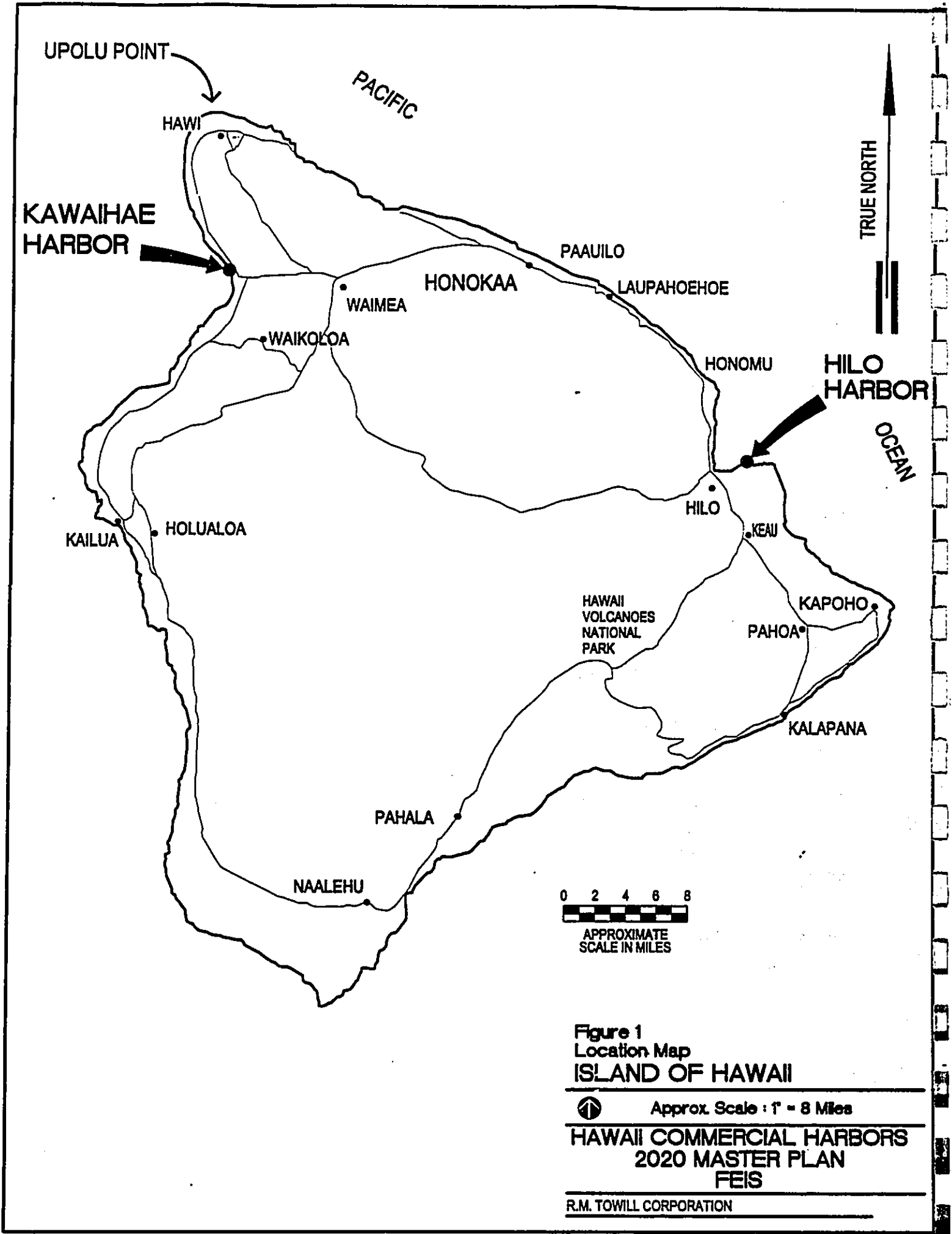


Figure 1
 Location Map
ISLAND OF HAWAII
 Approx. Scale : 1" = 8 Miles
HAWAII COMMERCIAL HARBORS
2020 MASTER PLAN
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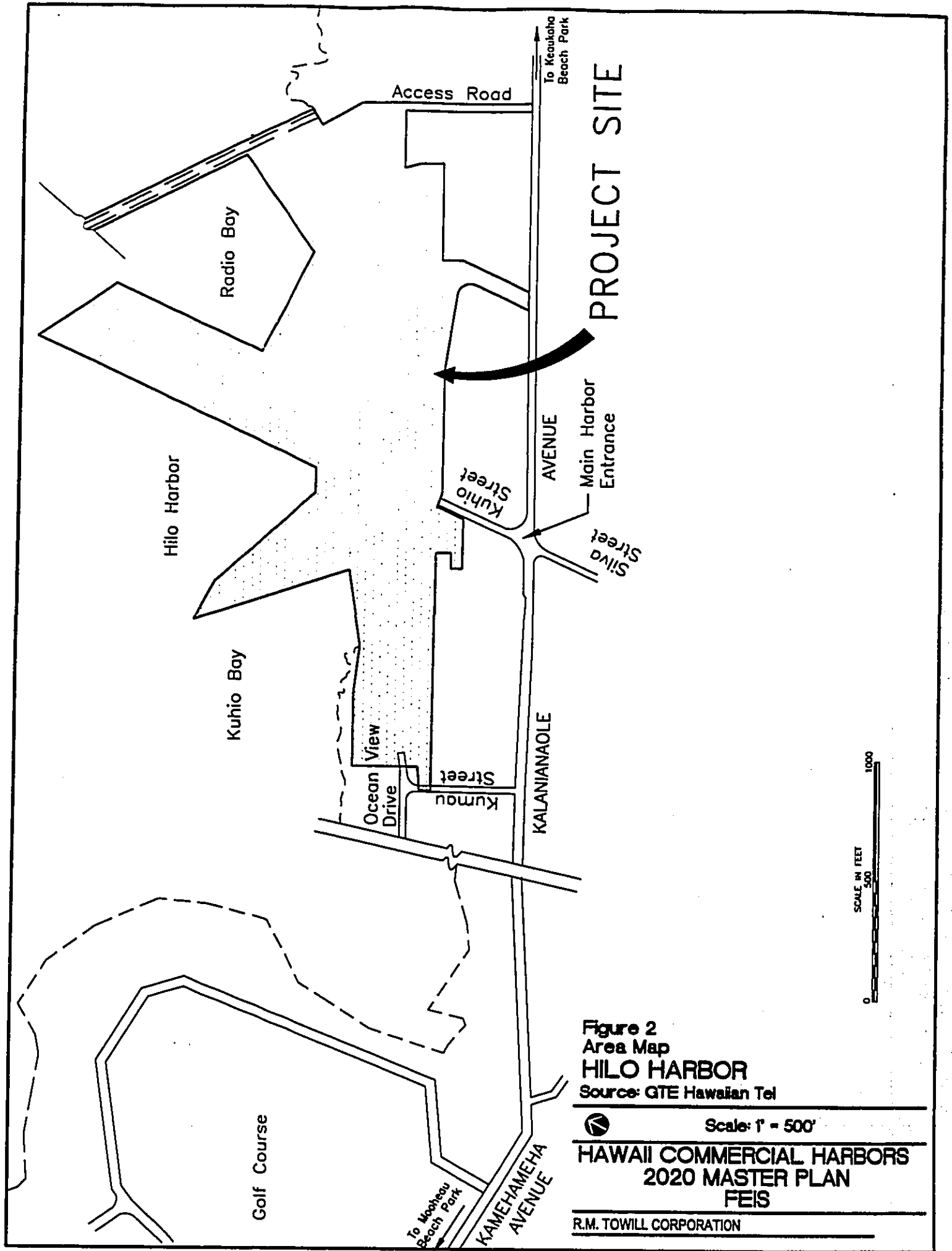


Figure 2
 Area Map
HILO HARBOR
 Source: GTE Hawaiian Tel

Scale: 1" = 500'
HAWAII COMMERCIAL HARBORS
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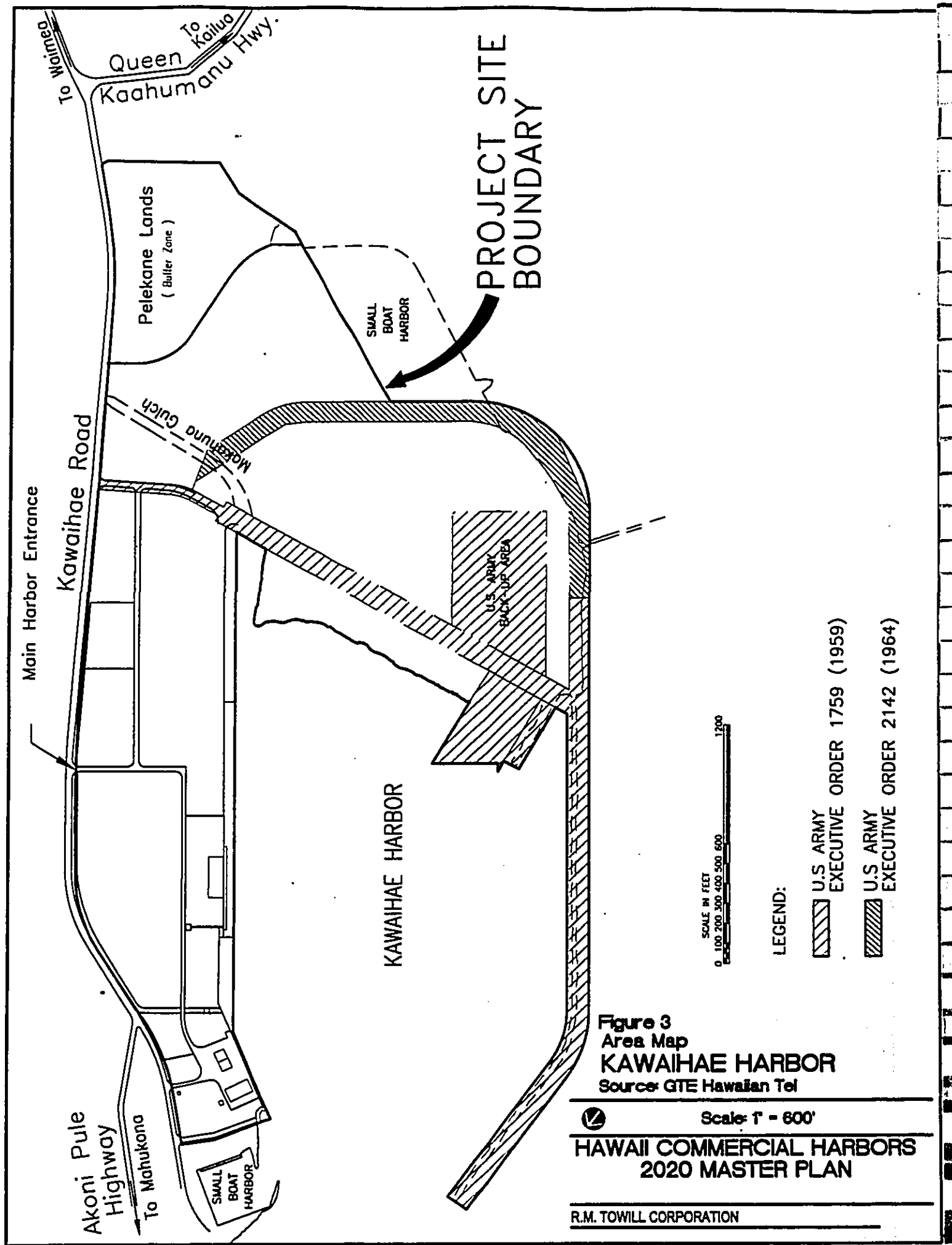


Figure 3
Area Map
KAWAIHAE HARBOR
 Source: GTE Hawaiian Tel

Scale: 1" = 600'
HAWAII COMMERCIAL HARBORS
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The harbor was constructed in 1959 by blasting and dredging out a portion of the coral reef offshore and constructing a breakwater of basalt boulders on the harbor's seaward side (ORCA/Cheney, 1981). Prior to this, a small boat harbor and wharf existed on the site. In 1969-70, a small boat harbor was added on the south side of the harbor jetty seaward of the revetment. This small craft harbor was modified in 1995. At that time an attempt was made to moderate the environmental impact of revetment construction by transplanting corals that would have been eliminated by the project (Jokiel et al., 1999). The commercial harbor's basin was expanded through additional dredging in 1972 (AECOS, Inc., 2000).

2.2 EXISTING CONDITIONS AND SURROUNDING LAND USE

Hilo Harbor. Hilo Harbor is bordered by Hilo Bay on the north and Kalaniana'ole Avenue on the south. Current activities and facilities within the harbor boundaries are shown in FIGURE 4. Land uses include, from west to east; Piers 1 and 2 and their accompanying sheds; bulk sugar storage tanks; Hawaiian Cement bulk storage facilities; Harbors Division office facilities; container yards; and a water tower. Harbor land to the east of Radio Bay was recently occupied with illegal tents and crude plywood structures. This area has since been cleared by the Department of Land and Natural Resources.

Container and general cargo, petroleum products, lumber, cement, livestock and liquefied petroleum gas are handled at Hilo Harbor's three piers. The combined cargo handling and storage area totals over 595,000 square feet. Pier 1, the largest of the existing piers at 1,250 feet of berthing space, is used by interisland container barges, cargo ships and large passenger cruise ships. At 725 feet, Pier 2 is primarily used for interisland barge activity. Pier 3, measuring 652 feet in length, is used mostly for fuel barges but also accommodates overflow berthing of cruise ships and ships carrying bulk cargo. Alongside depth of each pier is 35 feet, the same depth as the harbor's channel (SDOT, 1993).

The Radio Bay area is frequently occupied by a Coast Guard cutter, Harbor Pilot boat, University of Hawaii at Hilo research vessel, Clean Island Council container with equipment for containing oil spills, and itinerant private vessels, mostly sailboats.

The project area is bounded on three sides by industrial uses and fuel suppliers, Gas Company storage yard and office to the east, C. Brewer fertilizer warehouse facility to the south and the

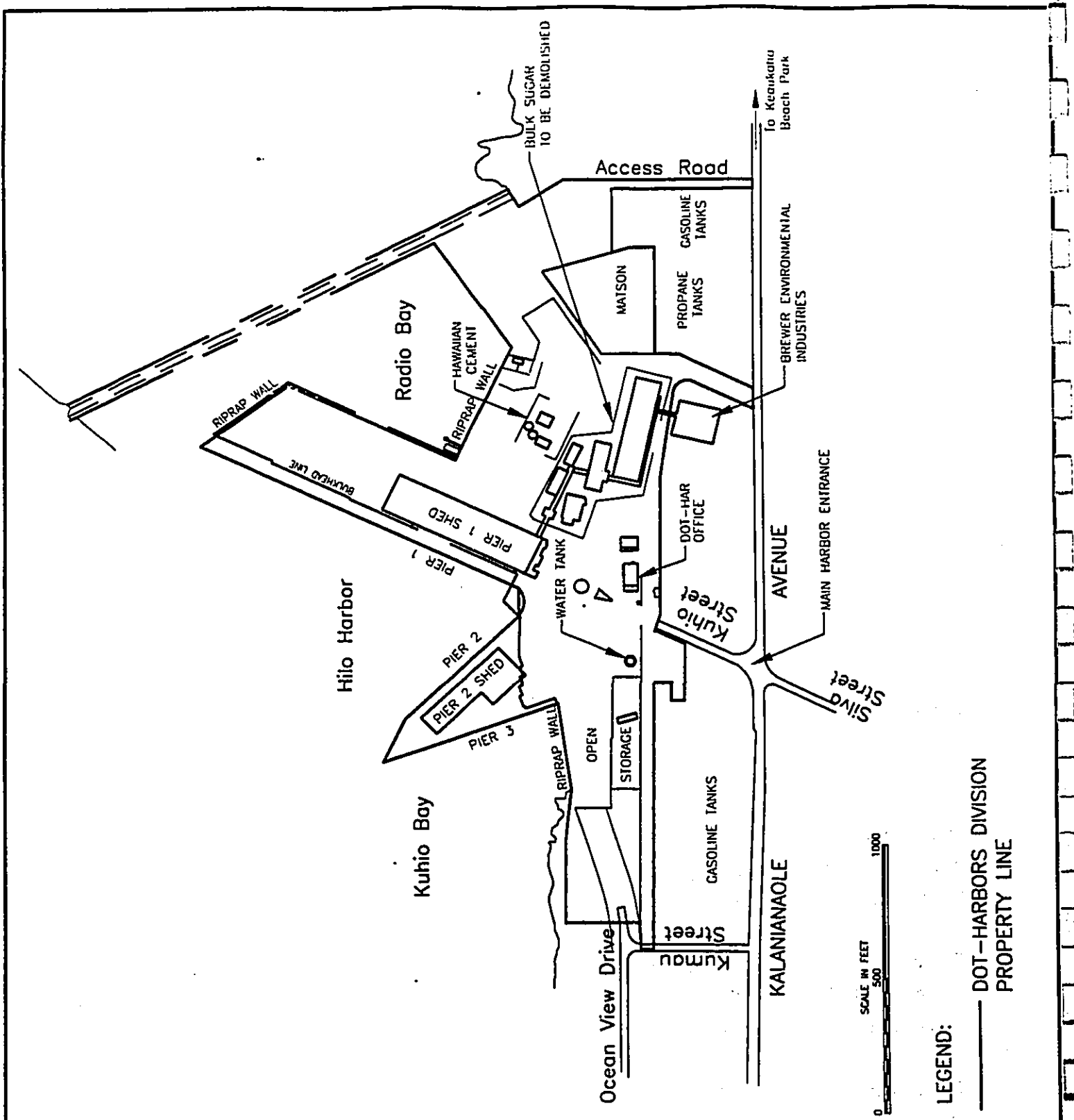


Figure 4
Existing Uses
HILO HARBOR

Scale: 1" = 500'

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harbor container yard to the north. Neighboring land uses on both sides of Kalaniana'ole Avenue include warehouses, University of Hawaii at Hilo's Pacific Aquaculture Research Center, petroleum tank yards and the Department of Hawaiian Home Lands community of Keaukaha.

Kawaihae Harbor. Kawaihae Harbor offers facilities for handling both overseas and inter-island cargo with room for future expansion. The harbor is strategically located to play a major role in the rapidly developing area of west Hawaii.

Kawaihae Harbor is bounded by Kawaihae Road, Puukohola *Heiau* National Historic Site, Hawaiian Home Lands, and the Pacific Ocean (FIGURE 3). The harbor is generally unimproved, with the exception of the inter-island barge and overseas terminals (FIGURE 5). Portions of the back-up areas are on long-term leases for petroleum product storage and bulk cement storage. To the north of the barge terminal are a livestock corral, a loading platform and a small boat harbor. The small boat harbor provides limited mooring for small vessels and a boat launching ramp. Another small boat harbor area is located at the south end of the harbor where a breakwater has been built by the U.S. Army Corps of Engineers.

The primary forms of cargo handled at Kawaihae Harbor are container and general cargo, bulk cement, lumber, steel, produce, petroleum products, bulk fertilizer, livestock, lava cinders and grain. Improved cargo handling and storage areas measure about 14 acres. The two piers at Kawaihae offer combined berthing space of over 1,562 feet. Pier 1 is 412 feet and used for barges. Pier 2 is 1,150 feet in length and has an alongside water depth of 35 feet. Pier 2a is used primarily for loading and offloading barges and has an alongside depth of 20 to 24 feet. The harbor turning basin measures some 1,450 feet by 1,500 feet with a depth of 35 feet. The entrance channel is 3,270 feet long, 500 feet wide and 40 feet deep. A 2,650-foot breakwater protects the harbor (SDOT, 1993).

Coexisting with the commercial port operations are recreational water related activities, including swimming, fishing, mooring of fishing and sailing boats along the east side of the harbor, a public boat launching ramp adjacent to the harbor entrance, and canoe racing practices conducted within the calm water of the harbor (AECOS, Inc., 2000).

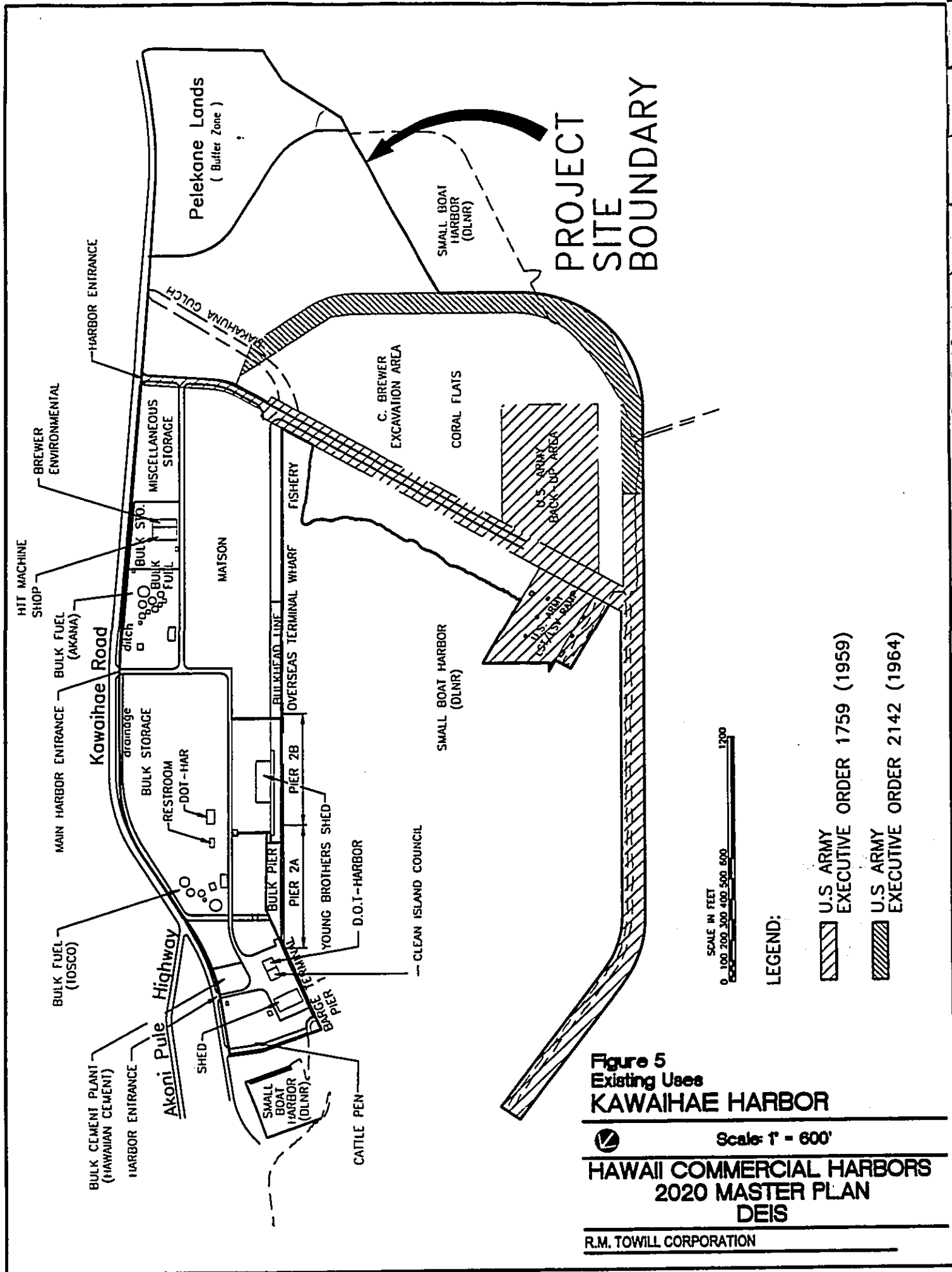


Figure 5
Existing Uses
KAWAIHAE HARBOR

Scale: 1" = 600'

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The eastern side of the harbor is a wide beach shoreline formed by the tailings from the dredging of the harbor from the original coral reef. Natural beaches occur outside the harbor on the seaward side of the small boat harbor, inside Pelekane Bay and at Spencer Beach Park. Kawaihae Harbor contains large basalt boulders that form the jetty and concrete or metal sheet piling bulkheads that form the docks.

The U.S. Army owns and operates a landing ramp in the southwest corner of the basin under Executive Order No. 1759 (1959) and access to the ramp area under Executive Order 2142 (1964).

The southeastern corner of the inner basin is also used as a temporary mooring site for recreational and commercial small boats with a wooden loading dock and dinghy rack located in the vicinity (SDOT, 1993).

2.3 PURPOSE AND NEED FOR THE PROJECT

2.3.1 Economic Impact of Hawaii's Harbors

Hawaii is a geographically isolated state. As such, its economic viability and growth potential are closely tied to its essential commercial harbor infrastructure. In 1992:

- The major harbor industries of Hawaii produced \$1.934 billion in direct sales.
- Hawaii's Gross State Product amounted to \$33 billion. Fully a third, or \$10.3 billion, of that amount in the form of goods and services passed through the State's commercial harbors.
- Harbor industries employed 8,298 people in Hawaii.
(McDonald and Deese, 1994; Lee and Olive, 1994, adjusted by SMS Research & Consulting for major commercial harbor industries)

2.3.2 Demand Factors for Harbor Facilities: Cargo and Cruise Ship Arrivals

Planned commercial harbor improvements will be driven by two factors. The first major element of demand for harbor infrastructure will be projected increases in shipping and cargo volume. This translates into the need for additional piers and terminal improvements. The second demand factor concerns harbor facilities needed to serve the rapidly expanding Hawaii cruise ship industry. This demand will translate into the urgent need for cruise ship berthing and passenger accommodations, particularly at Hilo Harbor.

Harbor Facility Demand Factor #1: Projected Demand for Shipping and Cargo Handling

The key driver of shipping is economic activity. Therefore, a consistently strong correlation exists between cargo growth and Hawaii's Gross State Product. The State of Hawaii has been experiencing economic turnaround since 2000, reversing a recessionary trend during the 1990s. According to First Hawaiian Bank's Economic Forecast, "much of the [State's] growth continues to be concentrated in the Neighbor Islands. As far as sustained growth is concerned, the Big Island has fared better in recent years than even Maui or Kauai" (First Hawaiian Bank, 2000). This growth will translate into the demand for space and facilities to handle increases in cargo volumes at the Island of Hawaii's two commercial harbors (FIGURE 6).

The concentration of recent tourism growth in Hawaii's Neighbor Islands is supported by analysis of tourism trends performed by the State Department of Business, Economic Development and Tourism:

"Oahu was the primary beneficiary of the surge in eastbound visitors during the first half of the 1990s ... As a result of the shift in growth from eastbound to westbound visitors since 1997, the visitor count on Oahu has fallen, while Neighbor Islands have experienced stronger growth on average. This trend has restored confidence in the tourism sectors of the Neighbor Islands and has provided a needed economic boost" (DBEDT, 1999a).

Hilo Harbor. Cargo movement through Hilo has remained stable over time, reinforcing Hilo Harbor as the key commercial harbor serving the Island of Hawaii. In addition to serving the needs of an increasing resident population, Hilo Harbor will be required to meet the demands of a growing diversified agriculture industry. Facilities must be modified continually to remain compatible with technological changes in the cargo handling industry, such as the accommodation of longer and heavier containers.

Kawaihae Harbor. Evidence of sustained economic growth on the Island of Hawaii is seen in the tightening of the island's job market, especially in west Hawaii where Kawaihae Harbor is located.

JOB GROWTH : NEIGHBOR ISLANDS LEAD THE WAY
BIG ISLAND LEADS THE NEIGHBOR ISLANDS

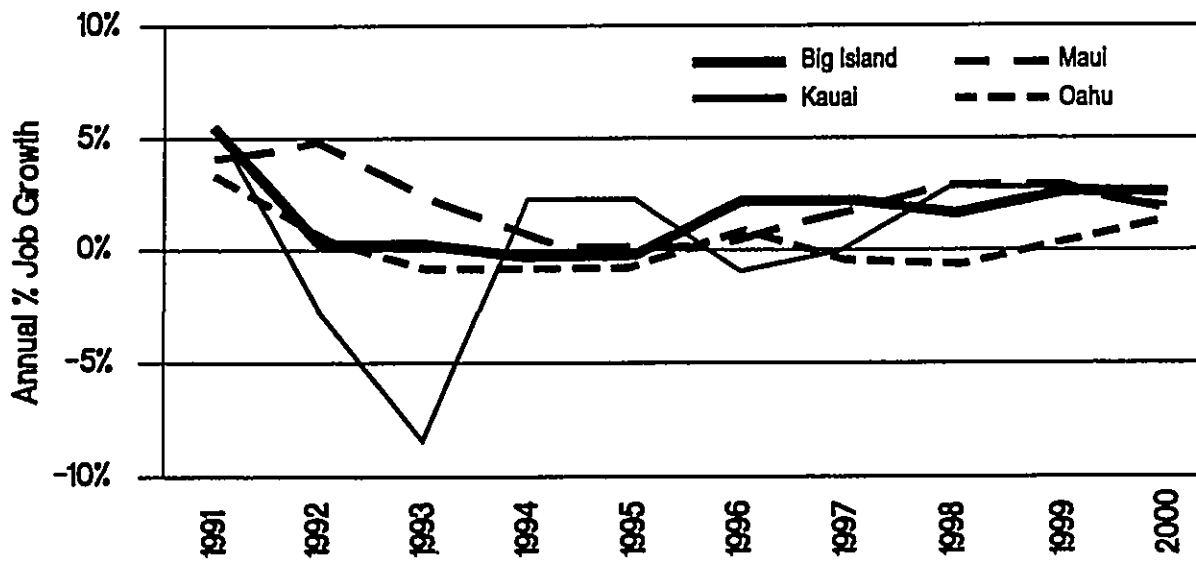


Figure 6
Job Growth - Neighbor Islands
Source: First Hawaiian Bank, 2000
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The island's economic growth is broad-based, with impressive tourism figures that are expected to continue. ***Economic indicators point to continued economic growth for the island. For example, [C]considerable construction activity is expected, both for residences catering to offshore demand and for substantial public works projects. Although Island of Hawaii building permits are up (FIGURE 7), offshore demand for second homes in west Hawaii is not fueling a speculative real estate market as it did in the past (First Hawaiian Bank, 2000). Building permit value is an indicator of the level of construction. The higher the value of building permits, the greater amount of construction is occurring. Consultation with rental agents in the South Hilo and South Kohala areas indicated a tight rental market for commercial and residential properties, but a lack of severe price inflation as was experienced in the late 1980s. Although rental prices have steadily risen in the past five years, prices have not reached the levels known during past inflationary periods.***

Analysis of Cargo Facilities Demand. Preparation of the Hawaii Commercial Harbors 2020 Master Plan included an extensive economic analysis that was translated into specific needs for physical improvements at each of the harbors. Economic analysis included research of economic trends and developing projections of future cargo volume. Growth projections in the Gross State Product and historical cargo demand patterns were used to forecast demand for additional cargo terminals and cargo handling at the two harbors. Projections of land requirements for cargo handling were developed by Harbors Division using standard port planning formulae which considered existing storage capacity, the amount of time cargo remains within the harbor, and monthly fluctuations in cargo activity. These factors are used to calculate demand for additional cargo handling space, expressed in acres. Finally, estimates of future space requirements at the two harbors were then reviewed for reasonableness by the project's harbor User Groups who were involved with each stage of the master planning process.

The analysis of future facility needs also considered the knowledge and experience of harbor users, government agencies, community groups and other stakeholders. Anticipation of future trends was aided by interviews with cargo carriers and cruise ship agents. The estimated 2020 demand for additional cargo handling space at the two harbors is shown in TABLE 2.

BIG ISLAND BUILDING PERMITS:
HEADING UP AGAIN

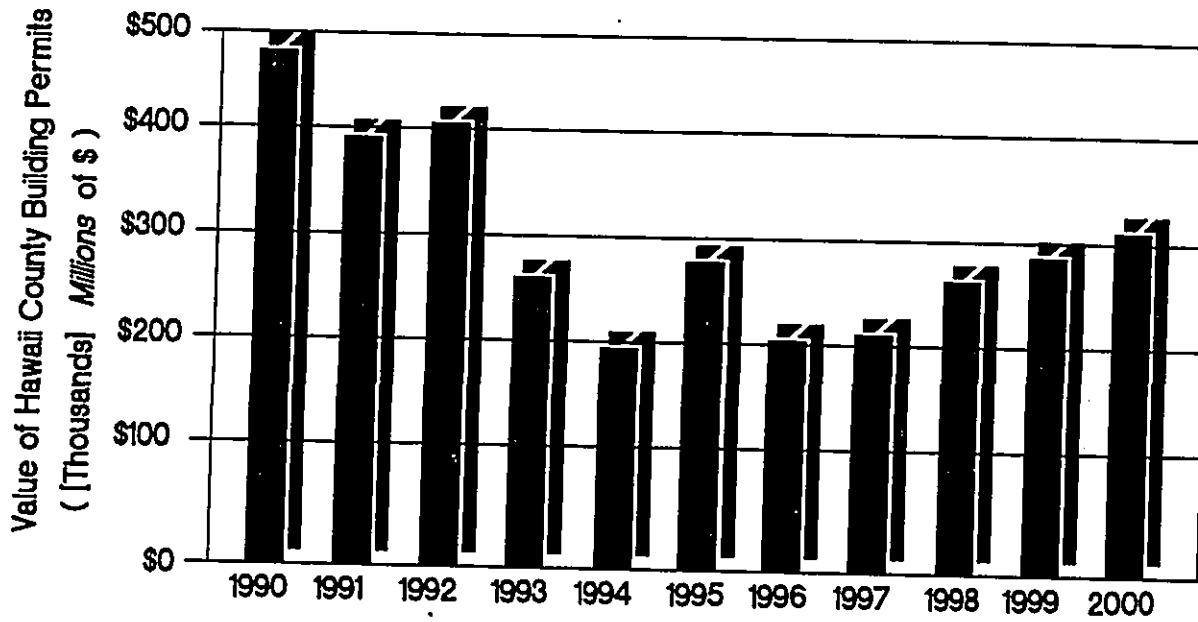


Figure 7
Big Island Building Permits
Source: First Hawaiian Bank, 2000

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TABLE 2
Projected Acreage Required for Harbor Operations to 2020

	Hilo Harbor Area to be Developed	Kawaihae Harbor Area to be Developed
Interisland Cargo Terminal	21 acres	21 acres
Overseas Cargo Terminal	20 acres	21 acres
Liquid Bulk Storage	N/A	22 acres
Dry Bulk Storage (<i>Timber Products, Cement and Scrap Metal</i>)	1	9 acres
Total Area to be Developed	42 acres	73 acres

Harbor Facility Demand Factor #2: Growth in the Hawaii Cruise Ship Market

Hawaii's cruise ship market is poised for record expansion in the coming years. Estimates indicate employment related to Hawaii's cruise ship industry could quadruple to more than 10,000 jobs by 2005 (DBEDT, 1999a, based on Leo A. Daley, 1999).

Traditionally foreign cruise ships have visited Hawaii between their Caribbean winter season and Alaska summer season. [Increasingly ships are coming from the Mainland U.S. with Hawaii as their primary destination.] Hawaii is becoming a more popular cruise ship destination because the newly-constructed ships are much faster and can cross the Pacific in sufficient time to allow visiting multiple islands.

Hawaii is considered the "last great year-round destination that has been overlooked because of its distance from other ports and because of the federal restrictions that have made it difficult for foreign-flagged ships to enter the market" (Honolulu Advertiser, December 3, 2000). The federal Passenger Services Act prohibits foreign-flagged ships (those registered in foreign countries) from conducting cruises exclusively within U.S. waters. Only American-registered ships, such as the SS Independence, may do so. To operate within this constraint, foreign-flagged ships are beginning or ending cruise packages in other countries while including Hawaii in the U.S. portion of the cruise.

The Hawaii market is comprised of two primary segments: interisland cruise ships and foreign cruise ships.

- **Interisland cruise ships.** Restrictions under the Passenger Services Act have limited the market because of a lack of American-flagged ships until the past several years. American Hawaii Cruises has long served Hawaii with interisland cruise ships, including the 1,000 passenger SS Independence and formerly the SS Constitution. Beginning interisland service

in December 2000, the newly purchased ship, MS Patriot, is expected to be the first of four large ships to arrive in Hawaii through 2004 to serve the interisland cruise ship market. American Hawaii Cruises registered about 46,000 passengers with one ship in 1998 and expects traffic to level off at about 190,000 per year with two ships. Each of the interisland cruise packages involves docking in Hilo Harbor and off the coast of Kona (DBEDT, 1999a).

- **Foreign cruise ships.** Passengers on foreign cruise ships nearly doubled from approximately 25,000 in 1997 to 49,000 in 1998. The firm of Leo A. Daley, consultants for Harbors Division, anticipates that passengers on foreign cruise ships will reach 100,000 by 2004; 200,000 by 2013; and nearly 340,000 by 2020 (DBEDT 1999a).
- **Total impact.** Over 500,000 total interisland and foreign cruise ship passengers are expected by 2020. As a result, retrofitting and renovations at Neighbor Island harbors are recommended by economic consultants for the period between 2004 and 2020 (DBEDT, 1999a).

Growth in the Island of Hawaii Cruise Ship Industry. Hilo Harbor is experiencing ever-increasing demand for berthing of luxury cruise ships. According to records of the Hawaii Island Harbormaster:

- Harbor bookings for 2001 are expected to total 153 cruise ships (48 foreign) compared to 92 in 1999. This represents an increase of approximately 75,000 passengers in Hilo.
- Passengers disembarking in Hilo are expected to nearly triple from a level of 64,356 in 1996 to a projected 172,000 in 2001.
- In 2001, all but three of the 153 cruise ships due at Hilo Harbor are over 600 feet in total length. In addition, 17 are over 900 feet and 33 total over 800 feet.
- At least two ships, holding approximately 4,000 passengers, may have to be turned away because they require berthing at Pier 1 and their schedule conflicts with weekly docking of American Hawaii Cruises vessels.

Cruise ship operators have conducted trial runs of berthing ships at Kawaihae Harbor and busing visitors to the Kona area. For the time being, cruise operators prefer to anchor off Kona rather than use berthing facilities at Kawaihae Harbor because of the distance to Kona (approximately 35 miles).

Projected Need for Harbor Facilities to Accommodate Cruise Ships. The need for cruise passenger harbor facilities is driven by two major factors: 1) lack of harbor infrastructure to accommodate multiple cruise ships and 2) lack of passenger amenities.

- **Lack of harbor infrastructure to accommodate multiple cruise ships simultaneously.** Both Hilo Harbor and Kawaihae Harbor were developed to accommodate strictly commercial shipping activities. However, the growing demand for the berthing of large passenger vessels and the lack of cruise ship berths could result in turning away of cruise ships from Hilo Harbor in the short term and from Kawaihae Harbor in the future. As an industry expert from Royal

Caribbean International & Celebrity Cruises was recently quoted, "It's not so much a passenger infrastructural support issue . . . it's to be able to maintain the presence of two ships on the same day, without hampering other harbor operations" (Honolulu Advertiser, December 3, 2000).

- **Lack of passenger amenities.** The passenger support issue also is important. At Hilo Harbor, passengers currently disembark onto the pier and may seek shelter in the industrial shed at Pier 1. They walk along the dock and are loaded into tour buses bound for Volcanoes National Park, the Mauna Kea observatories and local attractions in Hilo. Only the most rudimentary rest room facilities are available within the industrial shed at Pier 1. Tourist-oriented concessions display their wares in the shed.

2.4 FUTURE DEVELOPMENT ACTIONS UNDER THE 2020 MASTER PLAN

Hilo Harbor Improvements. The conceptual Master Plan for 2020 for Hilo Harbor includes the following elements and their approximate time frame, beginning with the Year 2002. The location of the improvements are summarized in TABLE 3 and illustrated in FIGURE 8.

TABLE 3
Summary of Planned Improvements to 2020
Hilo Harbor

Project	Timing	Area [[K= 1,000]]	New Pier	Dredging Alongside Piers*	Clearing, Grading & Paving	Utilities	Shed	Access Road
Piers 2/3 Dolphins	2002	0.18 acres	X					
Pier 1 Interim Passenger Terminal (Renovate existing shed)	2002	1.7 Acres					X	
Dry Bulk Cargo Staging Area	2003	1 Acre			X			
Pier 4 Interisland Cargo Terminal	2005	21 Acres	X	X	X	X	X	X
Pier 1 Overseas Cargo Terminal	2010	20 Acres			X	X		
Pier 5 Passenger Terminal	2015	0.8-0.9 Acres	X	X	X	X	X	X
Ocean Research Facility	2015		X	X	X	X	X	X

* Harbors Division is responsible for dredging from the pier face to the Federal Project Line, where the jurisdiction of the Army Corps of Engineers (ACOE) begins. The ACOE is responsible for dredging of the harbor channel and turning basin area within the harbor.

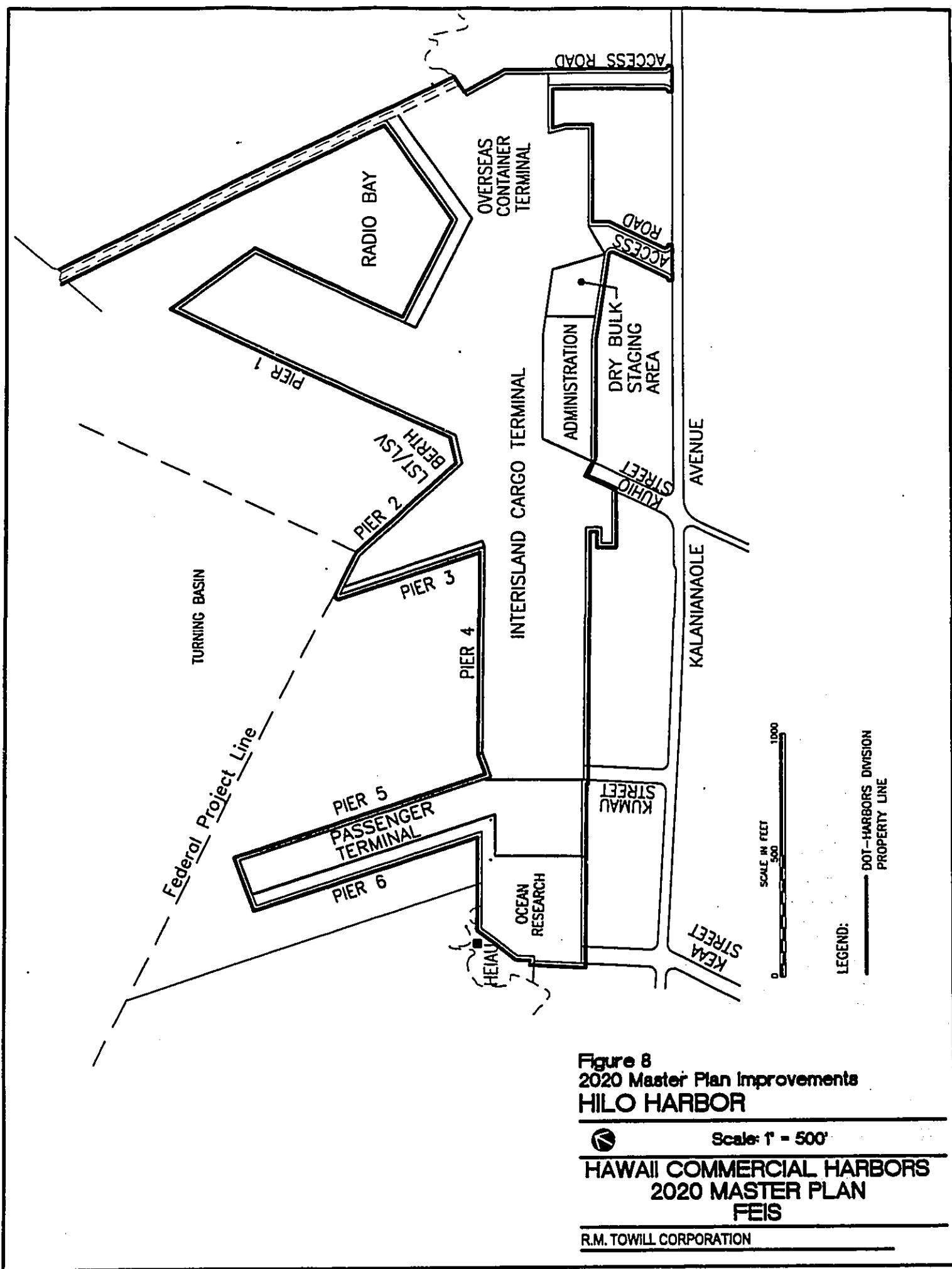


Figure 8
2020 Master Plan Improvements
HILO HARBOR

Scale: 1" = 500'

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Kawaihae Harbor Improvements. The conceptual Master Plan for 2020 for Kawaihae Harbor includes the following elements and their approximate time frame, beginning with the year 2002. The location of the improvements are summarized in TABLE 4 and illustrated in FIGURE 9.

TABLE 4
Summary of Planned Improvements to 2020
Kawaihae Harbor

Project	Timing	Area	New Pier	Dredging Alongside Piers*	Clearing, Grading & Paving	Utilities	Shed	Access Road
Liquid Bulk Cargo Terminal	2002	22 Acres	X	X	X	X		X
Pier 1 Dry Bulk Terminals	2003	9 Acres	X	X	X	X	X	
Pier 2a Overseas Container Terminal	2008	21 Acres	X	X	X	X	X	X
Piers 3-4 Terminal Interisland Cargo	2010	21 Acres	X	X	X	X	X	X
Passenger Terminal; Ocean Research Facility	2015		X	X	X	X	X	X
Pier 5 Military Cargo Terminal	2020		X		X	X		X

* Harbors Division is responsible for dredging from the pier face to the Federal Project Line, where the jurisdiction of the Army Corps of Engineers (ACOE) begins. The ACOE is responsible for dredging of the harbor channel and turning basin area within the harbor.

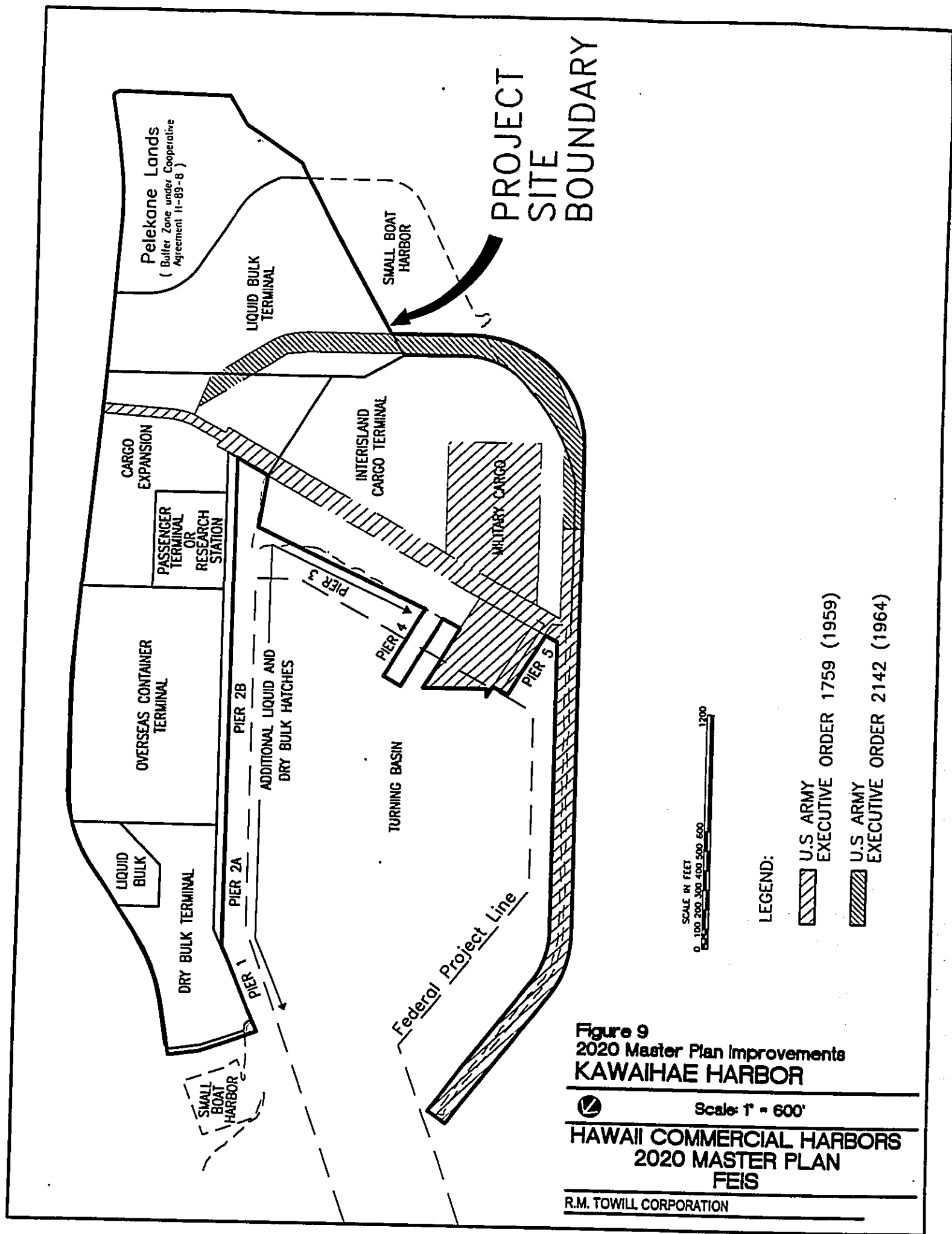


Figure 9
 2020 Master Plan Improvements
KAWAIHAE HARBOR

Scale: 1" = 600'
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2.5 OVERVIEW OF HARBOR DEVELOPMENT

Note: For definitions of harbor-related terms and acronyms, also see CHAPTER 11, GLOSSARY and CHAPTER 12, ACRONYM LIST.

The Hawaii Commercial Harbors 2020 Master Plan is a conceptual land use plan outlining future harbor development. The types of improvements proposed at the two harbors to accommodate growth in both cargo handling and cruise ships are discussed in general terms in this section. The sources of this information are a study by C.E. Maguire and R.M. Towill Corporation and personal communication with the Chief Engineer of R.M. Towill Corporation.

Types of development proposed for the harbors are described in the following sections:

- 2.5.1 Interisland Terminal Facilities
- 2.5.2 Overseas Terminal Facilities
- 2.5.3 Dry Bulk Terminals and Liquid Bulk Terminals
- 2.5.4 Construction of Terminals
- 2.5.5 Construction of Piers and Dolphins
- 2.5.6 Dredging of Berths

2.5.1 Interisland Terminal Facilities

The basic function of a marine terminal is to provide the transfer area when cargo is exchanged between land and water transportation carriers.

General cargo consists of miscellaneous cargo of varying quantities and sizes which are organized at the terminal for subsequent shipment to a common port or regional destination. Basic terminal facilities to transship general marine cargo consist of 1) a pier, 2) an adjacent apron for transfer of cargo to and from the vessel, 3) a marshalling (organizing) area and a covered transit shed or open area as required where cargo is accumulated or stored for subsequent shipment to its destination, and 4) adequate roadway access.

A typical general cargo facility such as an interisland terminal has berths capable of accommodating vessels up to 800 feet in length and maximum draft of 35 feet, although interisland operations at the two subject harbors are served by barges that currently measure only approximately 350 feet. *Although individual barges are generally 350 feet in length, they are often brought into the harbor in pairs with accompanying tugboats, thus requiring a longer pier. In addition, larger vessels such as liquid bulk tankers will need to be berthed at proposed Pier 3 to gain access to liquid bulk terminal facilities.*

Apron widths must be sufficient to allow crane access to the vessel and/or yard equipment to remove the cargo from the pier. A width of 50-200 feet is considered optimal for handling interisland cargoes. The current trend is toward transit sheds to be back as far as possible from the pier face to maximize flexibility in using the apron area. The typical area of a shed at smaller harbors is approximately 50-75,000 square feet (gross). Larger port transit sheds could be as large as 120,000 square feet per berth.

2.5.2 Overseas Container Terminal Facilities

Containerization is the use of specialized containers for transport of cargo. The basic container is a closed metal or reinforced box with fixtures for stacking, lifting and handling, and attachment to truck beds. Variations include: refrigerated units (reefers) and special types for the transportation of bulk cargo, automotive equipment, livestock, liquids, etc. Cargo carried by containers can include practically everything but the following: dry or liquid bulk products which are shipped in large quantities, such as coal, ore or petroleum; or commodities that cannot generally be containerized economically because of their nature, size and weight.

The advent of containerized cargo is one of the most significant advances in modern shipping. Containerization has revolutionized harbor operations by greatly increasing terminal efficiency and decreasing vessel turnaround (loading and offloading) time. Container terminal requirements differ from those of other cargo terminals in their onshore and equipment needs. However, berths and water depth requirements for container terminals are the same as for other cargo terminals. The minimum water depth should be 35 feet and berths should be planned in minimum lengths of 800 feet. It is essential that a container port be located close to highway access.

The backup area needed to serve a container terminal is generally larger than that required for other cargo operations. Terminal space requirements vary according to the size of ships calling, cargo handling equipment and method of storing. A terminal space of 15-30 acres per berth is not excessive. Most of the space requirements are for container storage or parking and marshalling of cargo. Some container terminals may also involve consolidation and stuffing operations which add to the space requirements. Parking area requirements can be reduced by vertically stacking containers or by the use of multi-level container parking structures.

Container terminal equipment generally includes a pier-mounted gantry crane of 30 to 50 ton capacity to handle the standard size containers. Additional gantry cranes or other specialized handling equipment are needed to transport the containers from dockside to the back-up area for marshalling, consolidation, and/or stacking and retrieval. Warehouses, transit shed and consolidation sheds may be required, depending on the type of operation, i.e., if container packing is to be done at the terminal.

Roll on/roll off or RO/RO ships are vessels specialized in the transport of wheeled equipment, or vehicles, and can carry wheeled containers. Cargo is rolled on and off the vessel through bow or stern ramps or side cargo doors. Combination container ships are being used with features that permit the carriage of wheeled vehicles of all sizes concurrently with unwheeled containers.

The basic concept of the RO/RO vessel is increased efficiency of the materials handling phase of cargo offloading, since costly crane equipment is not used. An inherent disadvantage in the system is the reduced cargo density by virtue of the internal ramps and elevators required and by the loss in volume taken up by chassis equipment. The RO/RO system is ideally suited for shorter sea routes where fast turnaround time is more important than the reduced cargo density.

2.5.3 Dry Bulk and Liquid Bulk Terminals

Dry bulk terminals include areas for storage, loading and unloading dry bulk. The facilities generally include a paved loading area and covered storage (usually an industrial shed). Liquid bulk facilities generally include above-ground storage tanks, a system of pumps and pipelines. Pipelines can be placed either under the pavement or above ground and lead to the piers where liquid bulk is transferred from vessels.

2.5.4 Construction of Terminals

New terminal areas will require the following construction elements:

Clearing, Paving and Grading of Terminal Areas. The design of each paved area will be consistent with the proposed use. For example, areas slated for overseas terminal development should be designed consistent with requirements for heavy industrial pavement areas utilized for container storage and handling.

Utilities. New utility lines, such as drain lines, water lines, and electrical duct trenches for utilities will be excavated in the surface fill materials encountered at each harbor site. In addition, below-ground transmission lines for liquid bulk (e.g. petroleum) will be installed within new paved areas.

Sheds. Sheds in harbors are for industrial uses and are generally of steel and concrete construction. The 2020 Master Plan foresees construction of industrial sheds for overseas and interisland terminals. Special-purpose sheds are also planned to serve as cruise ship terminal buildings to provide amenities and shopping opportunities for passengers.

Access Roads. Additional access roads are planned at each harbor to serve the newly developed terminal areas. These roads would generally be 40 feet in width. Access roads will be subjected to heavy vehicles. Based on heavy truck traffic, flexible pavement sections consisting of asphalt concrete over asphalt treated base may be used for design of the access roads. For other areas that will be light duty (for passenger cars, light trucks and occasional heavy trucks) as opposed to heavy duty, pavement can be constructed with a thinner layer of asphalt concrete over an aggregate base. To prevent drainage problems, new pavement will be slightly sloped to carry

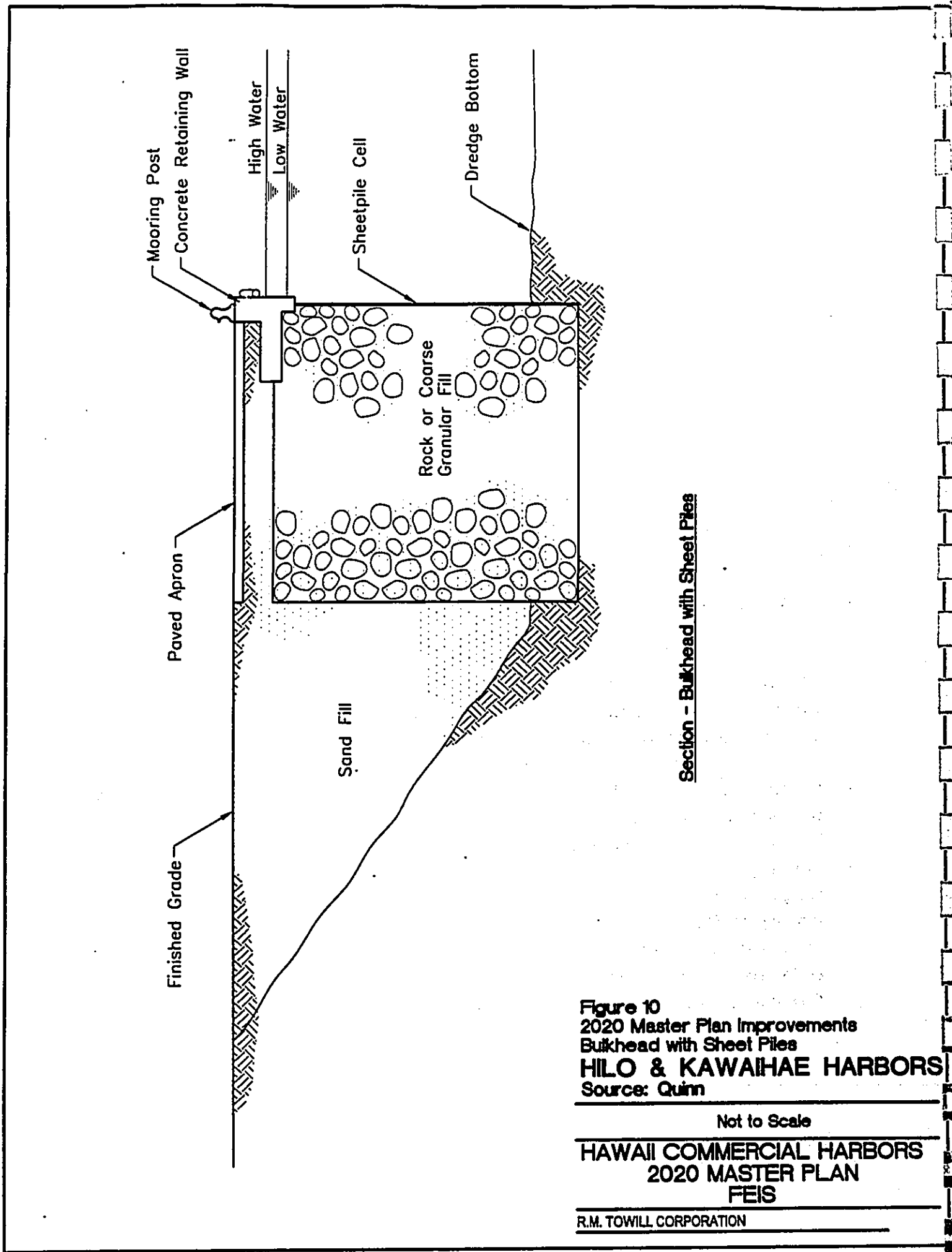
surface water off the pavement into appropriate drainage structures. At Hilo Harbor, a new access road will be required to serve the proposed research vessel area in Radio Bay. Furthermore, improvements will be required to existing Kumau Street for improved access to proposed Piers 4, 5 and 6. At Kawaihae Harbor, access roads will be provided as needed to support the planned new terminal facilities.

2.5.5 Construction of Piers and Dolphins

A new pier area should contain minimum protuberances in order to provide an open area for cargo offloading. Water, fire protection, and sewage outlets are generally inset into the deck and electrical and communications outlets placed adjacent to the pier curbing. Bollards are placed at 100 foot centers along the pier intermittently with cleats at the same spacing. Two additional bollards are placed on the seawall at the breakwater head to accommodate stern lines. Structural design of piers should take into account such a potential future installation. Similar consideration should be given to a future stern load platform for RO/RO type cargoes in locating utilities, bollards and pump stations. Pier areas include container staging areas.

Pier design must satisfy oceanographic design criteria and serve the functional cargo movement requirements. Numerous solid structures need to be evaluated in selection of a pier construction type. Types of pier construction include the following.

- **Bulkhead with Sheet Piles and Backfilling (FIGURE 10).** Sheet piles are interconnected steel circular cells filled with dredge material. This method of pier construction requires driving sheet piles and backfilling it with coral or other suitable material such as crushed rock. Pier 1, at Kawaihae Harbor is constructed in this manner.
- **Concrete Piles and Concrete Deck (FIGURE 11).** This type of pier construction requires the driving of concrete piles to support a concrete deck used for terminal space. Piers 1, 2 and 3 at Hilo Harbor are of this type of construction.
- **Combination Design.** Using this method of pier construction entails driving sheet piles and backfilling behind them. The seaward side is a concrete deck supported by piles. Pier 2a at Kawaihae Harbor is constructed in this manner.
- **Mooring Dolphins.** Dolphins are structures that jut out of the water and [can be] are used for tying down ships, thereby effectively extending the berthing space without having to construct a new pier. Dolphins consist of reinforced concrete caissons where basalt is encountered as the foundation material or concrete piles where coral is the substratum. **Often mooring dolphins are constructed in a row and are joined by a catwalk deck to accommodate forklifts or other equipment.**



Section - Bulkhead with Sheet Piles

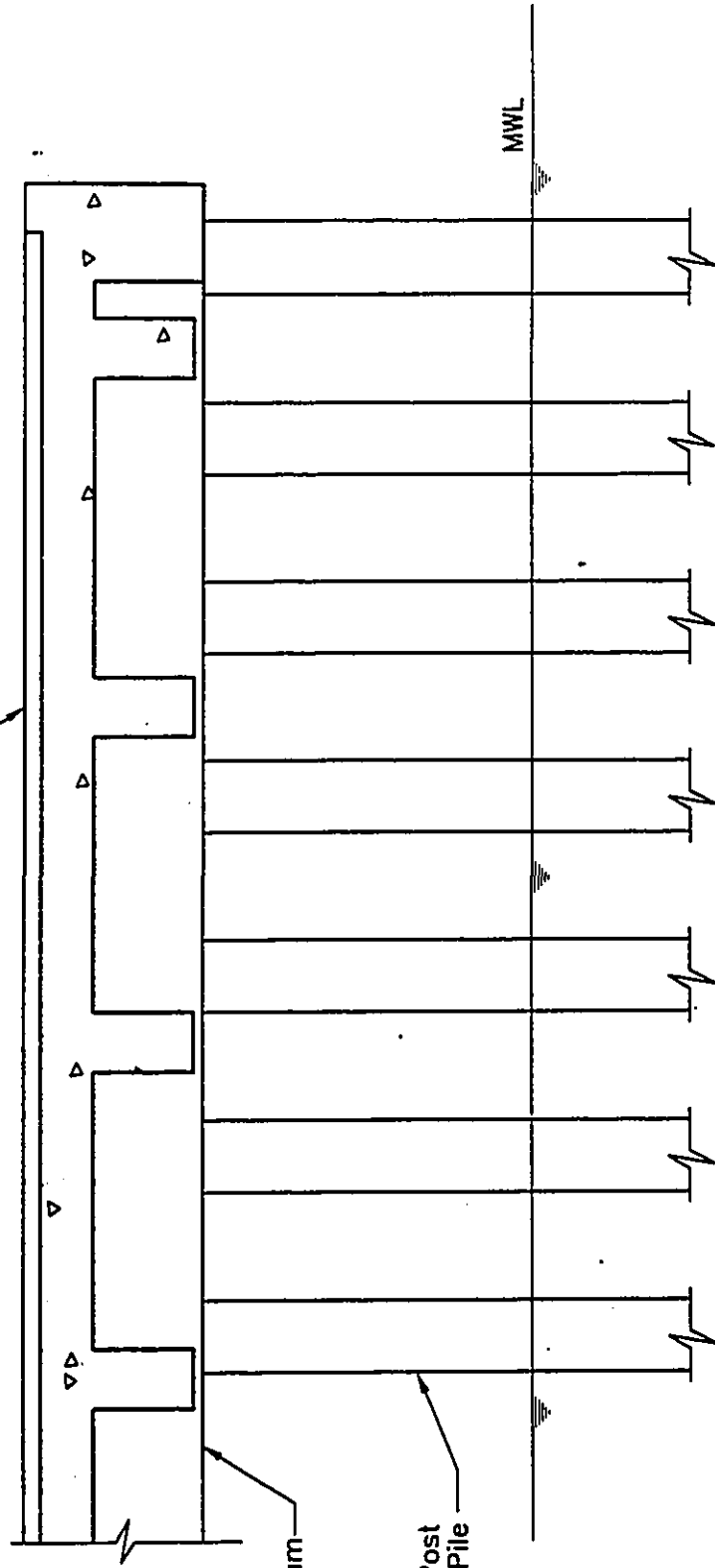
Figure 10
 2020 Master Plan Improvements
 Bulkhead with Sheet Piles
HILO & KAWAIHAE HARBORS
 Source: Quinn

Not to Scale

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Concrete Deck on
Prestressed Conc. Stringers



Concrete
Pile Cap Beam

Concrete Post
Tensioned Pile

Section - Concrete Deck on Concrete Piles

Figure 11
2020 Master Plan Improvements
Concrete Deck on Concrete Piles
HILO & KAWAIHAE HARBORS

Not to Scale

HAWAII COMMERCIAL HARBORS
2020 MASTER PLAN
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Hilo Harbor Projects. The 2020 Master Plan calls for construction of dolphins at the ends of Piers 2 and 3 and proposed Piers 4, 5 and 6. Construction of Piers 4, 5 and 6 will likely be of the concrete piles and concrete deck type of construction similar to the existing harbor. The actual design will depend on analysis of substratum conditions and engineering analysis.

Kawaihae Harbor Projects. The 2020 Master Plan pier projects at Kawaihae include the addition of three new piers.

2.5.6 Dredging of Berths

Dredging will be required to construct pier berths with the required alongside depth of 35 feet at **Hilo Harbor and 40 feet at Kawaihae Harbor.**

Dredging Methods. The conventional method of dredging uses a cutterhead (similar to a chisel pile driver) or explosives. Although the cutterhead is the most likely method to be used at the subject harbors, the proper dredging method will have to be determined by analysis of harbor conditions during the design phase of each project.

Disposal of Dredging Spoils. Once materials have been dredged, the "spoils" (dredged material) will require disposal. Spoils comprised of coral and basalt can be used in pier construction and pavement construction, respectively. The ability to reuse spoils on-site will depend on the nature of the substratum in the dredging area and the amount of room *available* to store the spoils on-site. For Hilo Harbor dredging spoils, Harbors Division plans to utilize an Environmental Protection Agency (EPA)-approved ocean dumping site. This will require testing of dredged material and proper permitting by the U.S. Department of the Army. For dredging spoils from Kawaihae Harbor, Harbors Division intends to continue stockpiling on the harbor site. If there is insufficient room for on-site disposal, dredge spoils from Kawaihae Harbor will be transported to the EPA site as well.

Hilo Harbor. Wash borings conducted in 1980 in the general vicinity of Baker's Beach indicate a substratum of hard or crunchy corals that can be readily dredged by conventional cutterhead methods. ***Carefully controlled blasting may be required to remove underlying basaltic surfaces, if they are encountered, to achieve the dredge depth of 35 feet for the proposed new piers.***

Kawaihae Harbor. At Kawaihae Harbor, conventional cutterhead dredges may not be useful in this material because of its hardness, the high mobilization costs and the vulnerability of floating dredges and disposal pipelines to high wind conditions. Carefully controlled blasting may be required to remove underlying coral surfaces to the dredge depth of 40 feet for the proposed new piers.

2.6 PROPOSED DEVELOPMENT AT HILO HARBOR AND KAWAIHAE HARBOR

As shown in Tables 3 and 4, the following projects proposed at the subject harbors are described and illustrated in this section:

Hilo Harbor

- 2.6.1 Mooring Dolphins at Piers 2 and 3 (2002)**
- 2.6.2 Renovation of Pier 1 Shed (2002)**
- 2.6.3 Dry Bulk Staging Area (2003)**
- 2.6.4 Overseas Cargo Terminal (2010)**
- 2.6.5 Interisland Cargo Terminal (2005)**
- 2.6.6 Passenger Terminal (2015)**

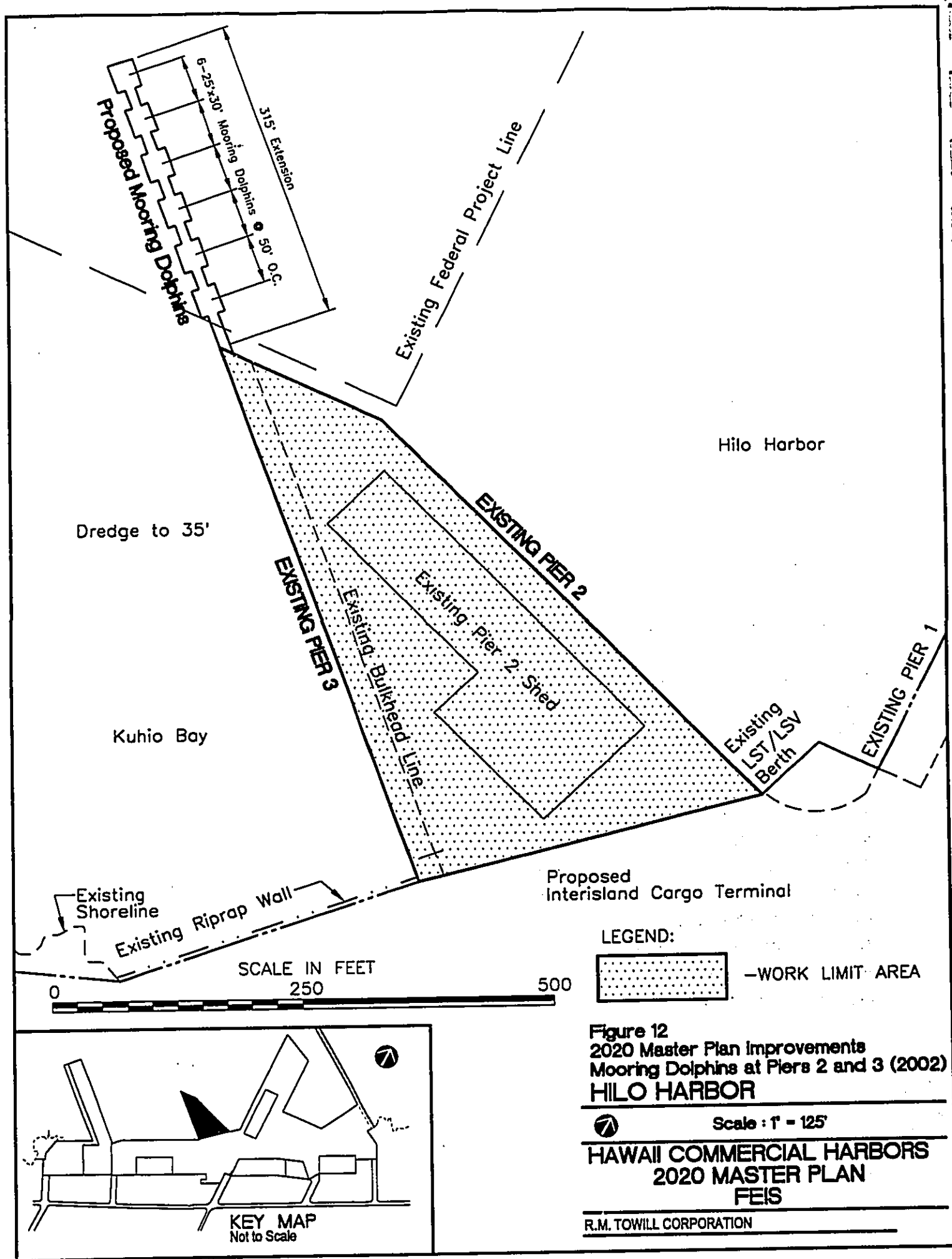
Kawaihae Harbor

- 2.6.7 Liquid Bulk Terminal (2002)**
- 2.6.8 Dry Bulk Terminals (2003)**
- 2.6.9 Overseas Container Terminal (2008)**
- 2.6.10 Interisland Cargo Terminal (2010)**

2.6.1 Hilo Harbor: Pier 2 and 3 Mooring Dolphins (2002) (FIGURE 12)

The purpose of constructing mooring dolphins at Hilo Harbor is to extend the berthing area at Pier 3 to accommodate larger vessels such as cruise ships. The proposed mooring dolphins are located in line with existing Pier 3, at 50-foot intervals (from the center of one dolphin to the center of the next) forming a 315-foot extension of the mooring area. Each mooring dolphin's surface is approximately 25 by 30 feet. The mooring dolphins consist of concrete platforms supported by piles. The platforms are approximately ten feet above the harbor water.

The proposed dolphins are connected by a concrete walkway ("catwalk") supported by concrete piles. The 10-foot wide catwalk connects the mooring dolphin platforms to accommodate stevedores operating forklift equipment. The catwalk includes safety handrails and bullrails (similar to curbs) along the edges to inhibit machinery from leaving the catwalk. The catwalk will comply with requirements of the Americans with Disabilities Act. The catwalk and platforms approximate the height of existing Pier 3 to allow equipment to pass from the pier surface to the catwalk and mooring dolphins. Mooring bollards or cleats will be installed on the horizontal surface of the dolphins to tie up vessels.



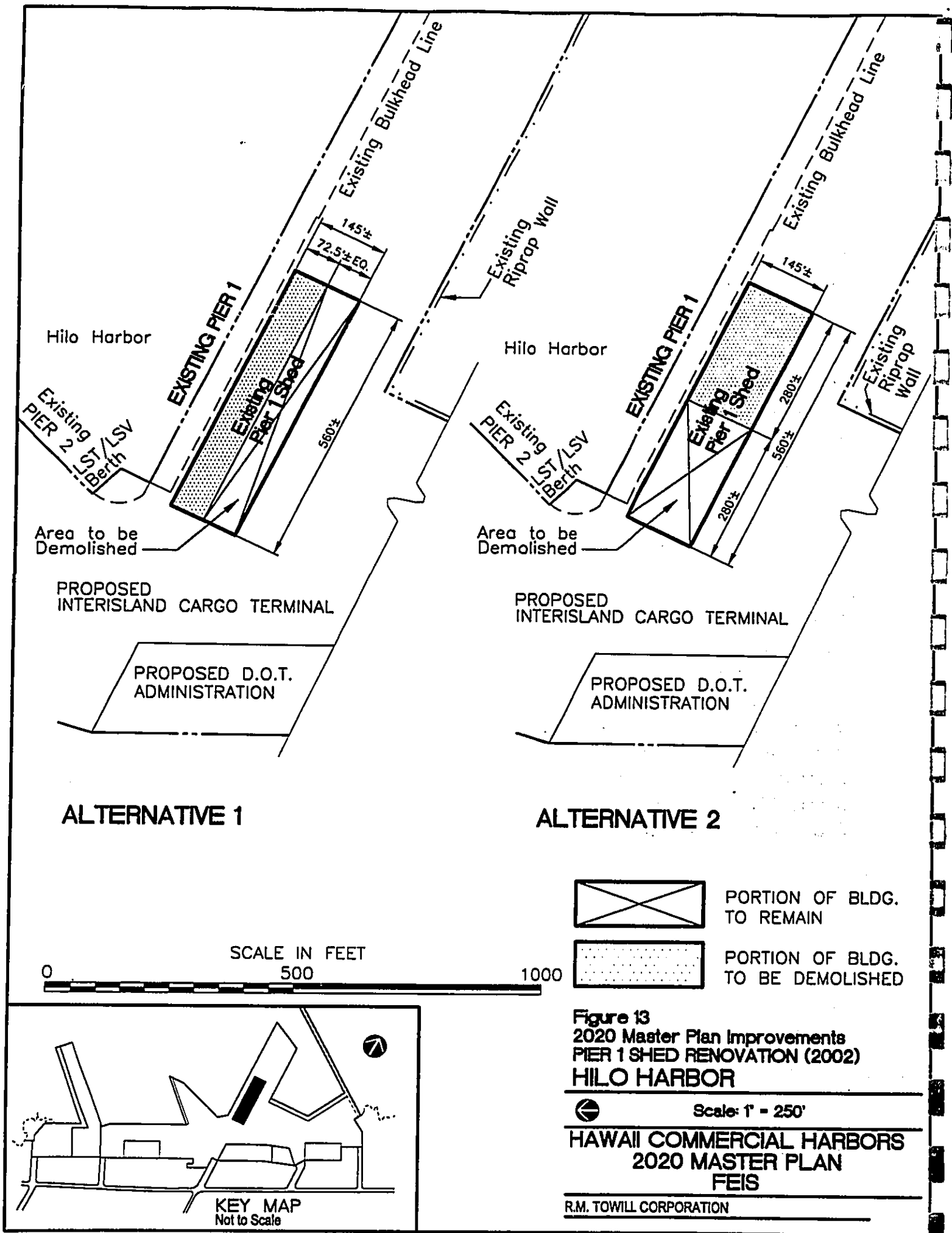
2.6.2 Hilo Harbor: Renovation of Pier 1 Shed (2002) (FIGURE 13)

The purpose of the renovation of the Pier 1 shed is to optimize vehicular circulation, passenger accommodations and overall efficiency of Pier 1 usage, particularly by cruise ship passengers. Because it is considered internal renovation, this project is exempt from Chapter 343, Hawaii Revised Statutes. Renovation of Pier 1 is an interim solution to the problem of accommodating cruise ship arrivals. The long-term solution is a new, single-use passenger terminal at proposed Pier 5 in 2015.

The Pier 1 renovation reduces the size of the existing shed by half (from approximately 72,000 ft² to approximately 36,000 ft²). Reduction of the shed size could be lengthwise or widthwise, depending on the final renovation plan. Internal renovations are focused on providing temporary passenger terminal amenities for cruise ship passengers disembarking at Pier 1. These modifications include office space, ground transportation, restrooms, a waiting room and a holding area. A dedicated passenger walkway on the interior of the renovated Pier 1 shed leads to the existing parking area.



2.6.3 Hilo Harbor: Dry Bulk Staging Area (2003; 1 acre) (FIGURE 14)

The purpose of the dry bulk staging area at Hilo Harbor is to store bulk cargo such as forest industry products. The proposed dry bulk staging area consists of a 1-acre cargo yard paved for heavy lift equipment. To protect the surrounding area from leaching, runoff or accidental spills of toxic materials, the dry bulk staging area is surrounded by a trench which empties into a sump structure. The trench will likely be trapezoid-shaped and could be approximately four feet wide at the bottom and ten feet wide at the top, subject to design specifications. An approximately 5-foot by 7-foot collection sump connected to the drainage trenches provides further protection from potential spillage. A 12-inch berm surrounds the drainage trenches. The dry bulk staging area requires electrical utilities, overhead lighting and a partial perimeter security fence.



ALTERNATIVE 1

ALTERNATIVE 2

-  PORTION OF BLDG. TO REMAIN
-  PORTION OF BLDG. TO BE DEMOLISHED

SCALE IN FEET
0 500 1000

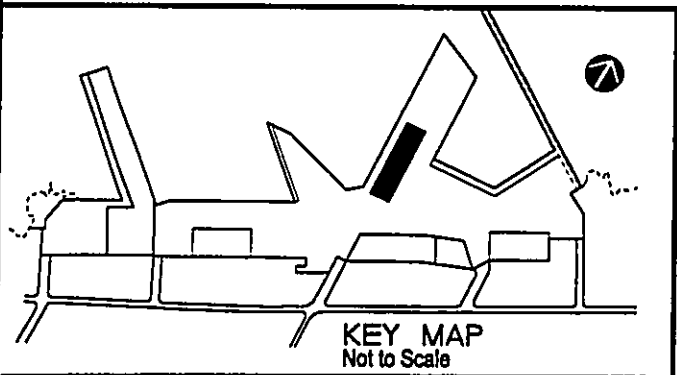


Figure 13
2020 Master Plan Improvements
PIER 1 SHED RENOVATION (2002)
HILO HARBOR

Scale: 1" = 250'
HAWAII COMMERCIAL HARBORS
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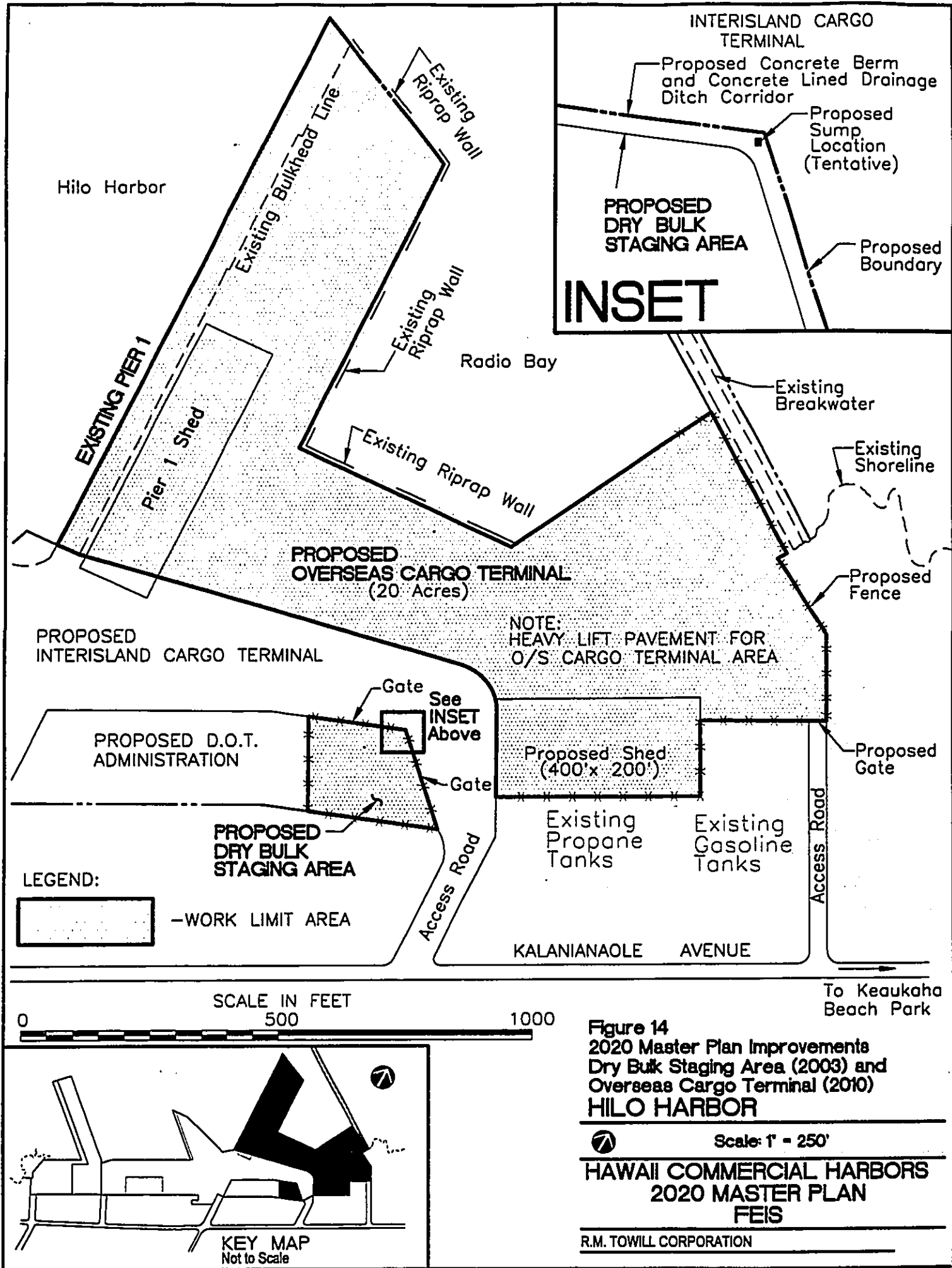


Figure 14
 2020 Master Plan Improvements
 Dry Bulk Staging Area (2003) and
 Overseas Cargo Terminal (2010)
HILO HARBOR

Scale: 1" = 250'
HAWAII COMMERCIAL HARBORS
 2020 MASTER PLAN
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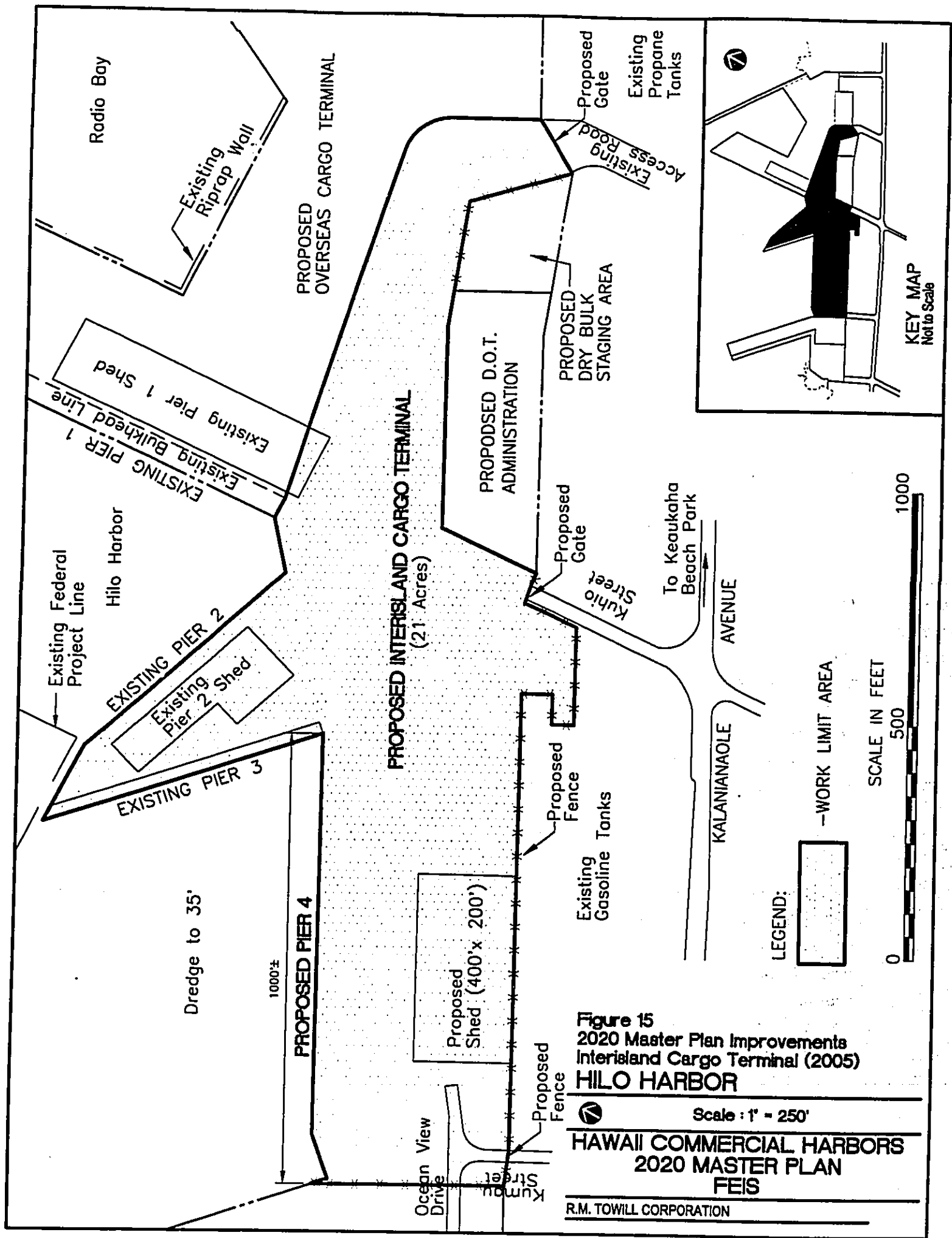
R.M. TOWILL CORPORATION

2.6.4 Hilo Harbor: Overseas Container Terminal (2010; 20 acres) (FIGURE 14 above)

The purpose of the Overseas Cargo Terminal at Hilo Harbor is to accommodate projected future increases in overseas cargo volume. The proposed 20-acre overseas container terminal consists of paved area and a single-story industrial shed. The area to be paved is a hardened surface suitable for use by heavy lift equipment. The proposed shed is approximately 80,000 ft² (200 feet by 400 feet). The proposed shed is one story and of steel and concrete construction. The overseas container terminal requires overhead lighting and perimeter security fencing. Utilities of electricity, sewer, water and telephone service are required to support terminal activities. The pavement will be designed to accommodate heavy lift equipment. The exact composition of the pavement will be determined in the design phase based on geotechnical information regarding the substrata. Internal circulation also will be determined during the design phase and will be accomplished via striping of terminal area pavement.

2.6.5 Hilo Harbor: Interisland Cargo Terminal (2005; 21 acres) (FIGURE 15)

The purpose of the Interisland Cargo Terminal at Hilo Harbor is to accommodate projected future increases in interisland cargo volume. Proposed Pier 4 provides berthing space. The 1,000-foot pier design is probably a concrete platform supported by piles, bulkheads with sheet-piling or a combination of the two types. The construction method will be determined in the design phase. Dredging is required next to the pier to a depth of 35 feet. The proposed interisland cargo terminal includes a shed of approximately 80,000 square feet (200 by 400 feet). The terminal requires overhead lighting, perimeter security fencing, and utilities of electricity and water. Approximately 21 acres will be paved with a hardened surface suitable for use by heavy lift equipment. Access to the interisland cargo terminal is provided via existing Kumau Street. The proposed Pier 4 berths, interisland cargo terminal, will be dredged to a depth of 35 feet. Because this is an existing shoreline, the pier design could be either bulkhead (sheet piles with backfill), concrete piles and concrete deck, or a combination of both. The final choice of pier support will be made during the design phase.



PROPOSED INTERISLAND CARGO TERMINAL
(21 Acres)

Figure 15
2020 Master Plan Improvements
Interisland Cargo Terminal (2005)
HILO HARBOR

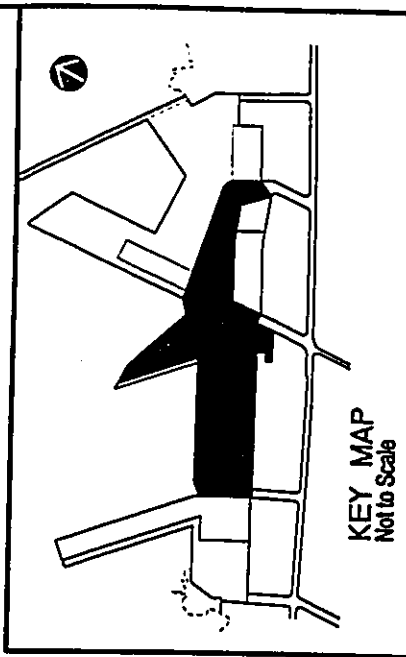
Scale : 1" = 250'

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LEGEND:
 - WORK LIMIT AREA

SCALE IN FEET
 0 500 1000



2.6.6 Hilo Harbor: Passenger Terminal (2015; 35-40K Ft² area) (FIGURE 16)

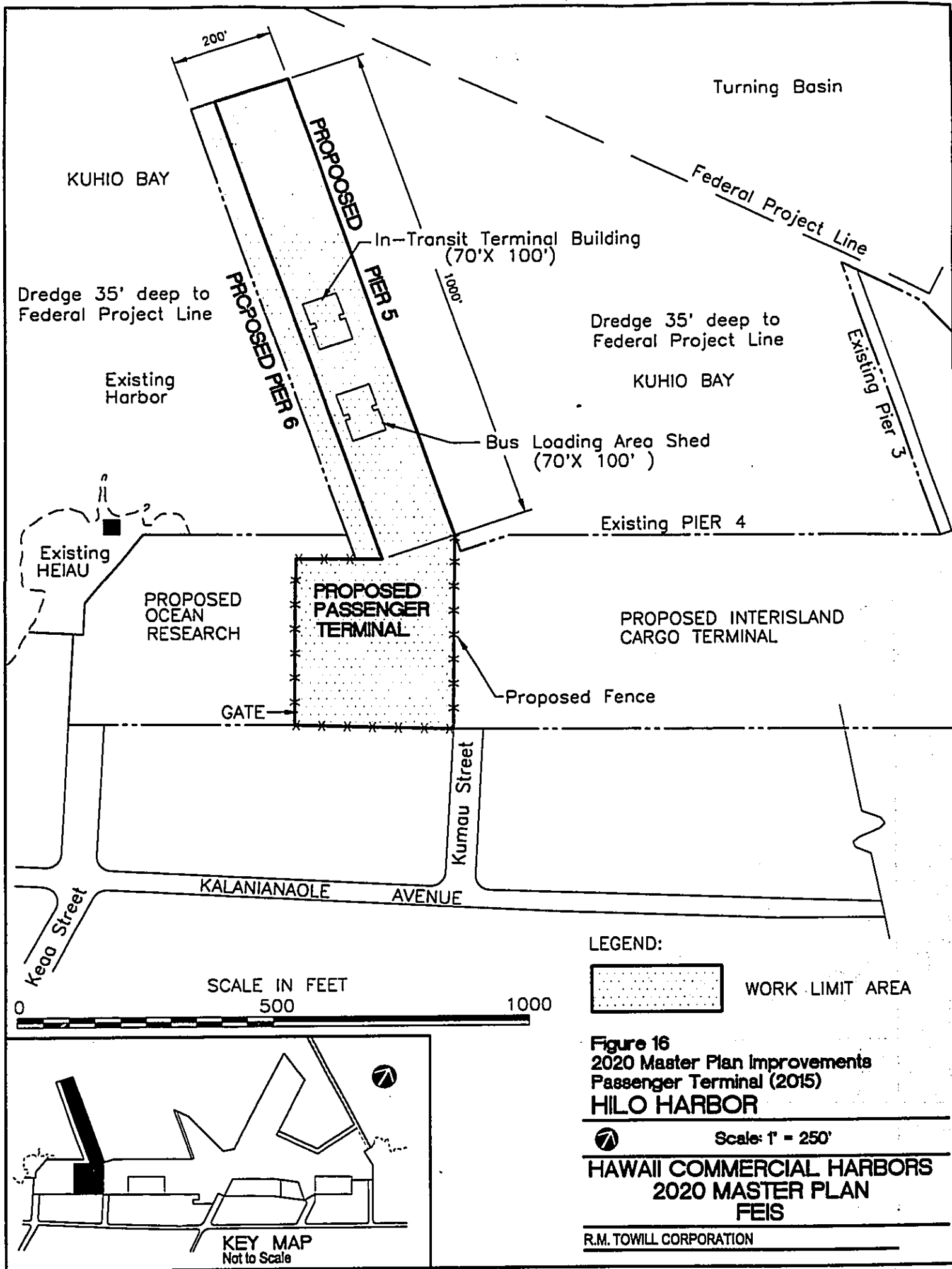
The purpose of the Passenger Terminal is to optimize accommodations by segregating cruise ship activity from other maritime operations in Hilo Harbor. The proposed passenger terminal consists of a terminal building and a bus staging area on the pier. The approximately 7,000 ft², twenty-foot high, single-story passenger terminal building includes such facilities as a passenger waiting lounge, rest rooms, information booth, telephone booths, entertainment area, refreshment and lei stands, storage and circulation space. The bus staging area features an approximately 7,000 ft² bus loading passenger shelter and additional space for bus circulation. A preliminary site plan was prepared by Leo A. Daly, Inc., for Harbors Division in 1998.

The proposed cruise terminal facility would serve as Hilo Harbor's primary cruise ship berthing facility at proposed Pier 5. Piers 1, 3, and proposed Pier 6 would function as overflow berths for cruise ships when additional berthing area is required. Berths at Piers 5 and 6 require dredging to a depth of 35 feet to the existing Federal Project Line. Piers 5 and 6 will most likely follow the concrete deck on pilings construction type of existing Piers 1, 2 and 3.

The proposed cruise terminal facility has an internal roadway system and parking areas that provide sufficient space for queuing, stacking, drop-off, and turnaround functions of buses, taxis and limousines. The vehicular circulation system connects through Ocean View Drive to Keaa Street. The proposed vehicular access from Keaa Street provides circulation of passenger related traffic, which includes tour buses, taxicabs, rental car shuttles, limousines, and public, private and staff vehicles. Cargo/container traffic, store vehicles, baggage trucks, and other operationally related vehicles utilizes the Kuhio Street harbor entrance for access to pier side activity.

2.6.7 Kawaihae Harbor: Liquid Bulk Terminal (2002; 22 acres) (FIGURE 17)


The purpose of the liquid bulk terminal at Kawaihae Harbor is to accommodate the offloading and storage of liquid bulk materials, primarily petroleum. Having a liquid bulk terminal at Kawaihae Harbor removes the current requirement to offload all of the island's liquid bulk products at Hilo Harbor and ship them by truck to West Hawaii, including all jet fuel for Kona International Airport. The 22-acre proposed liquid bulk terminal includes a combination of six 150-million barrel (MBBL) storage tanks, truck parking, truck maintenance area, warehouse shed, employee and guest parking and commercial cardlock



LEGEND:

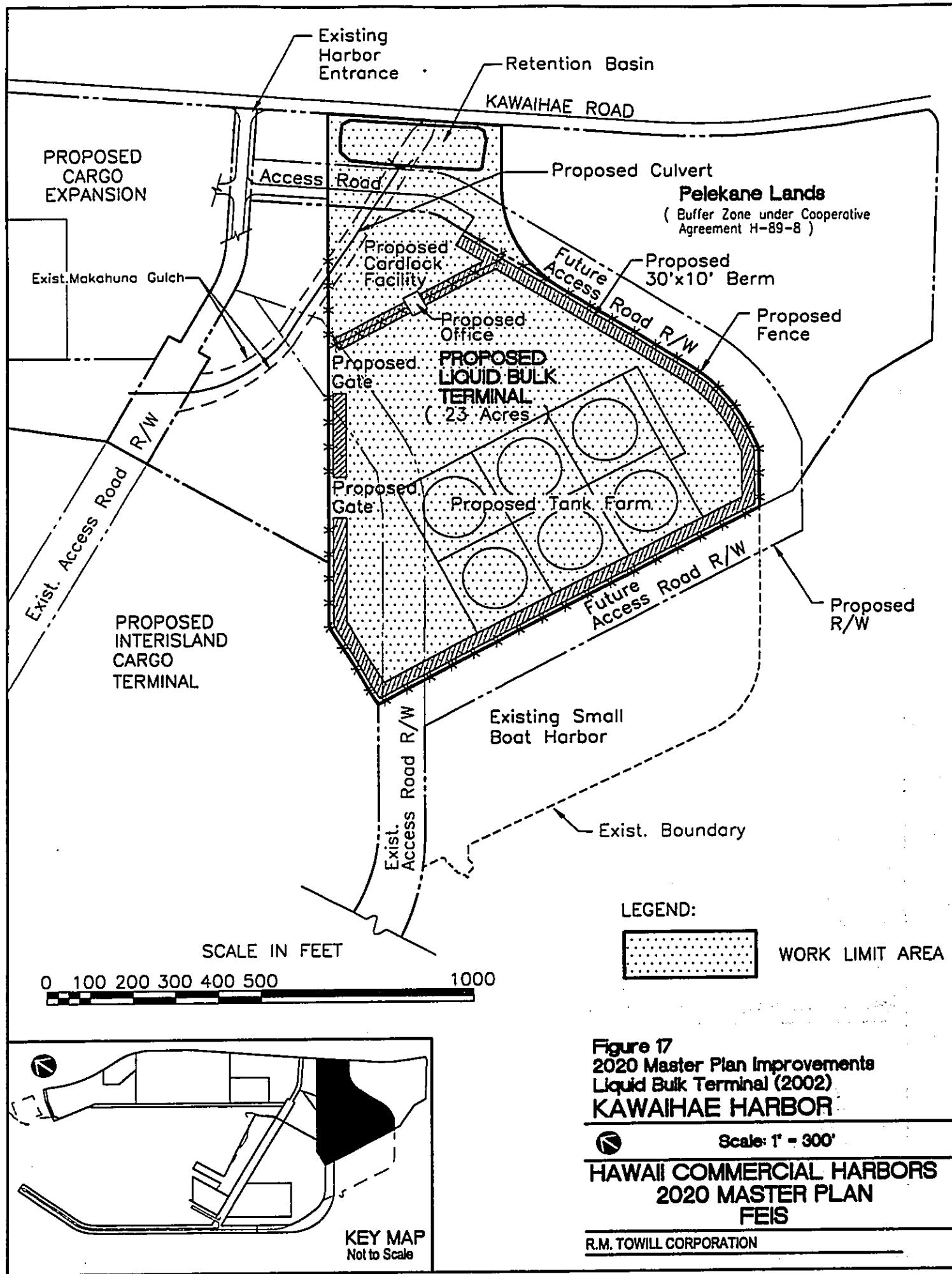
 WORK LIMIT AREA

Figure 16
2020 Master Plan Improvements
Passenger Terminal (2015)
HILO HARBOR

 Scale: 1" = 250'

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facility. Safety and emergency facilities are also provided. Construction of the liquid bulk terminal will comply with all applicable environmental requirements for containment of spills.

2.6.8 Kawaihae Harbor: Dry Bulk Terminals (2003, 9 Acres) (FIGURE 18)

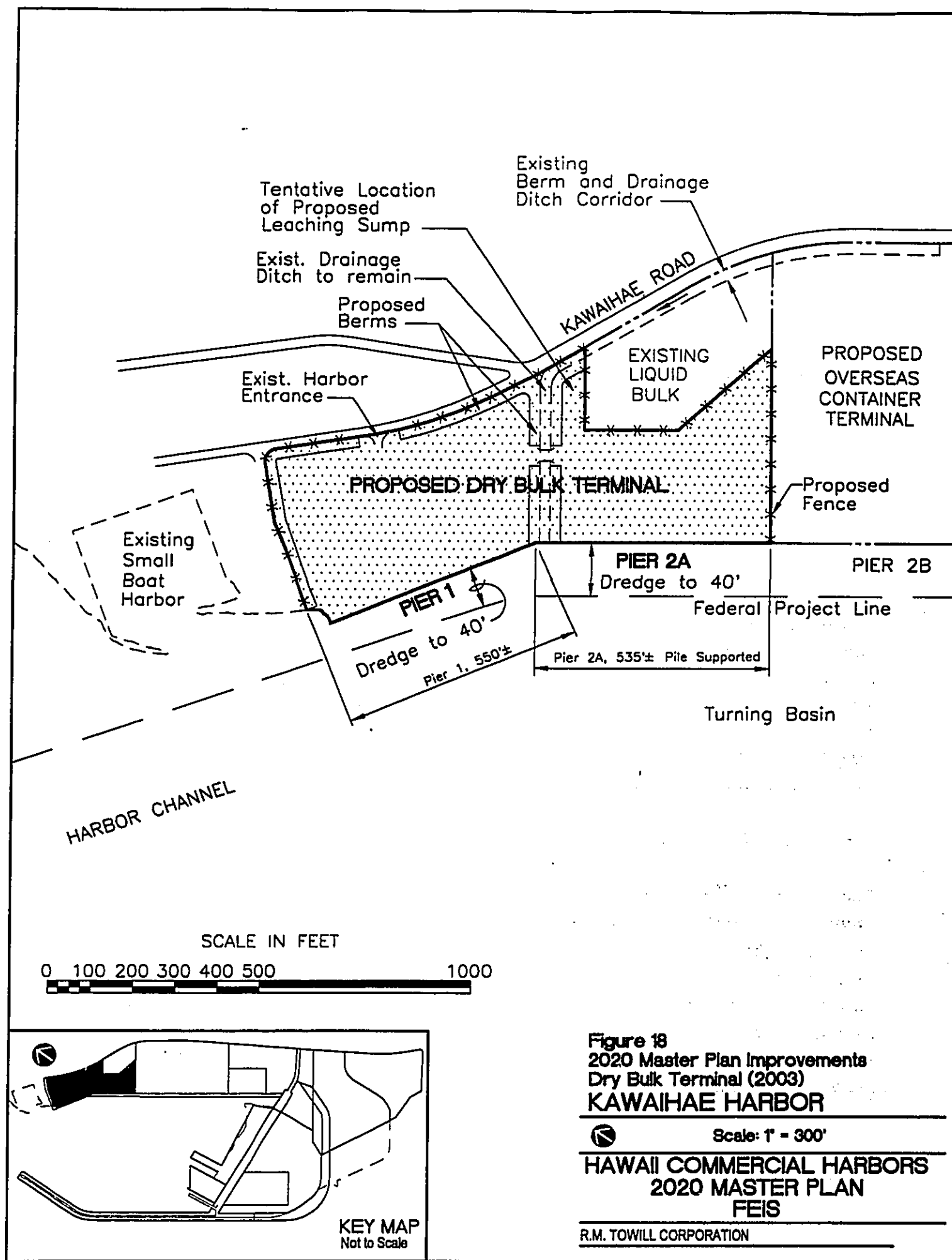
The purpose of the dry bulk terminals at Kawaihae Harbor is storage of dry materials such as scrap metal, cement and timber products. Two pile-supported piers serve the proposed dry bulk terminals: existing Pier 1 at 550 feet and existing Pier 2a at 535 feet. At each berth at Piers 1 and 2a, dredging is proposed to a depth of 40 feet. To protect the surrounding area from leaching, runoff or accidental spills of toxic materials, the proposed dry bulk terminals are surrounded by drainage facilities in which liquid can be pumped from a collection sump. The trench will most likely be trapezoid-shaped and will be approximately four feet wide at the bottom and ten feet wide at the top, subject to design specifications. A 12-inch berm surrounds the drainage trenches. The dry bulk cargo terminal requires electrical utilities, overhead lighting and a partial perimeter security fence.

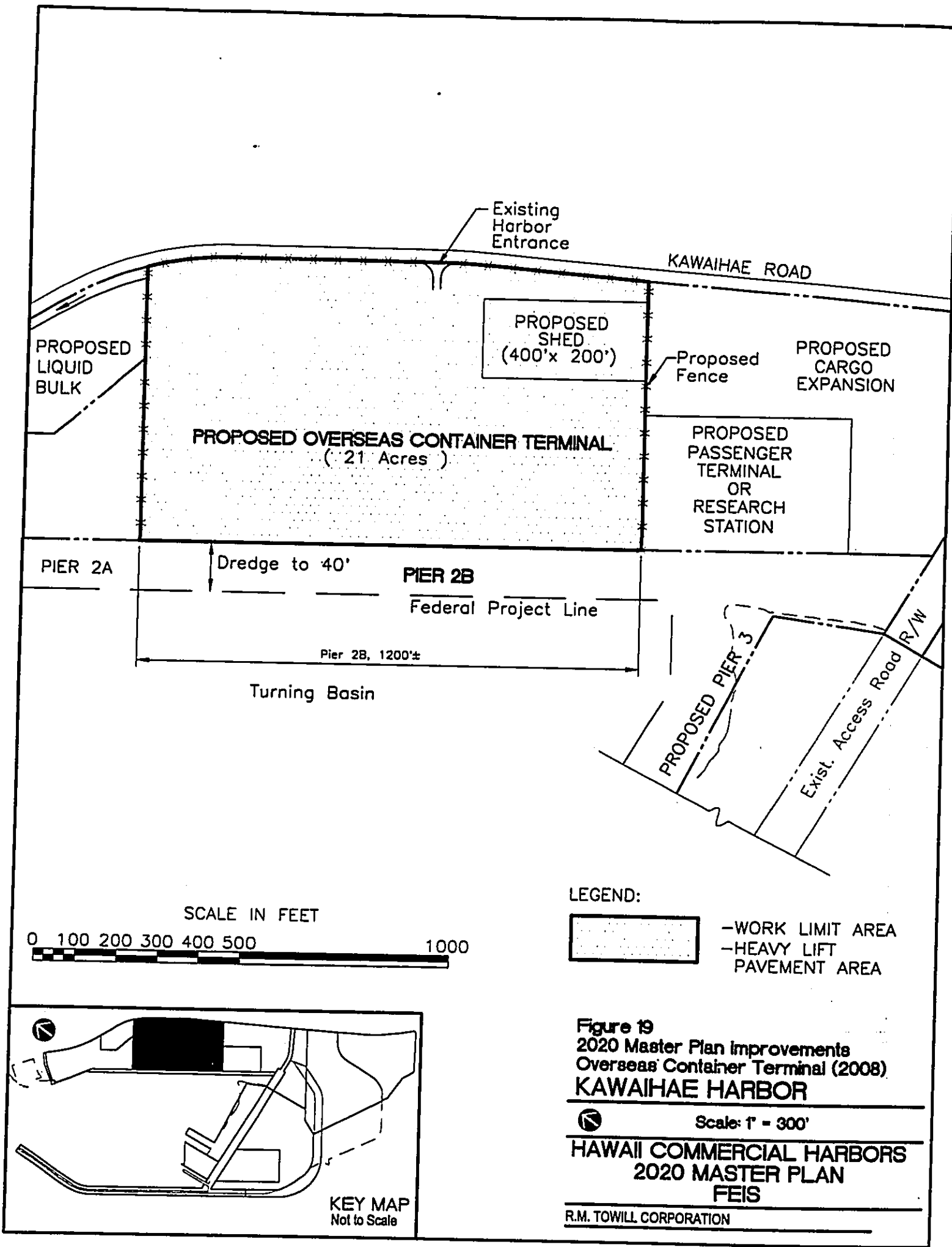
2.6.9 Kawaihae Harbor: Overseas Container Terminal (2008, 21 Acres) (FIGURE 19)

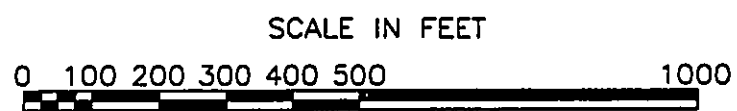
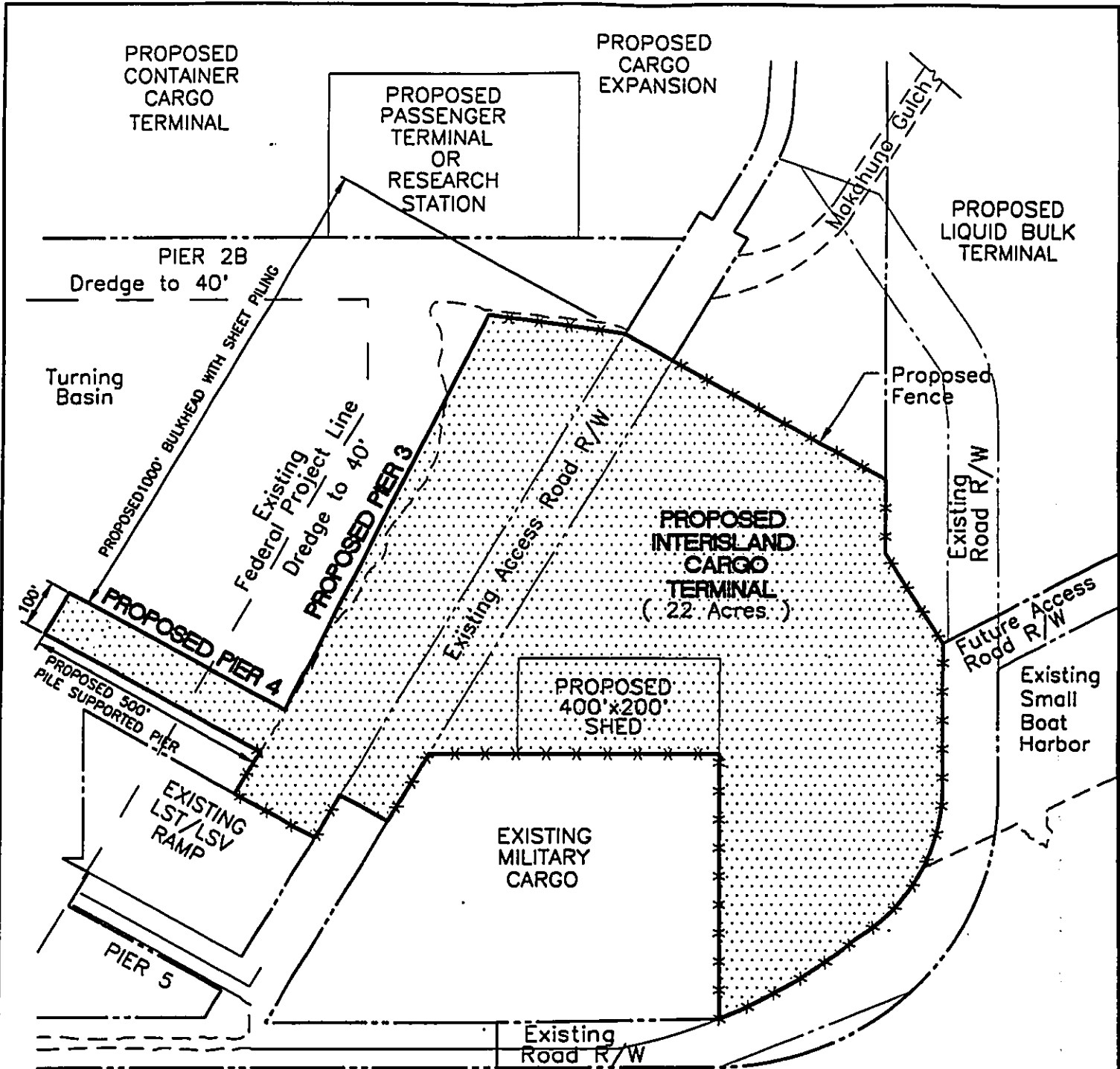
The purpose of the Overseas Container Terminal is to accommodate projected future increases in overseas cargo volume. Berthing for this 21-acre facility is provided by the existing Pier 2a. The dredge depth at the berthing area of Pier 2a is proposed to be increased from 35 feet to 40 feet. A 400- by 200-foot shed is included in the design. The shed is proposed as a one-story structure of steel and concrete construction. The terminal requires overhead lighting and utilities of electricity, water, wastewater collection and telephone. When completed, the combined pier face of Piers 2a and 2b is proposed to provide 2500 feet of continuous berthing.

2.6.10 Kawaihae Harbor: Interisland Cargo Terminal (2010, 21 Acres) (FIGURE 20)

The purpose of the Interisland Cargo Terminal is to accommodate projected future increases in interisland cargo volume at Kawaihae Harbor. This proposed 21-acre facility consists of hardened pavement to accommodate heavy lift equipment. The berth area is proposed to be dredged to 40 feet in depth. Proposed Pier 3, 1000 feet in length, will be either of concrete platform on piles, bulkhead with sheet piling, or a combination of both. Pier 4, also serving the interisland cargo terminal, is approximately 500 by 100 feet and supported by piles. A 400- by 200-foot shed is included in the design. The shed is proposed as a one-story structure of steel and concrete construction.







LEGEND:

WORK LIMIT AREA

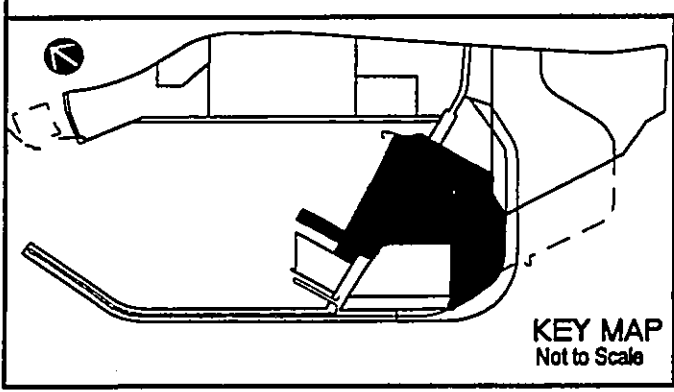


Figure 20
2020 Master Plan Improvements
Interisland Cargo Terminal (2010)
KAWAIHAE HARBOR

Scale: 1" = 300'

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The terminal requires overhead lighting, perimeter security fencing, and utilities of electricity, water, wastewater collection, and telephone.

2.7 SCHEDULE AND COST

Proposed improvement projects listed in TABLE 3 and TABLE 4 above would commence in 2002 and extend throughout the planning horizon to 2020. It is the practice of Harbors Division to review and amend harbor master plans every five years. *A re-evaluation of the proposed improvements will be done every five years to see if any conditions have changed requiring a new Environmental Assessment or Environmental Impact Statement.*

Cost for implementation of the Hawaii Commercial Harbors 2020 Master Plan is broadly estimated by Harbors Division planners at \$150-300 million (Personal Communication, Glenn Soma, Harbors Division, 2000). This estimate is preliminary due to the conceptual level of planning at this time. *State of Hawaii funds and land will be utilized for the proposed harbor development. No federal funds will be used.*

CHAPTER 3

AFFECTED ENVIRONMENT, POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

3.1 CLIMATE

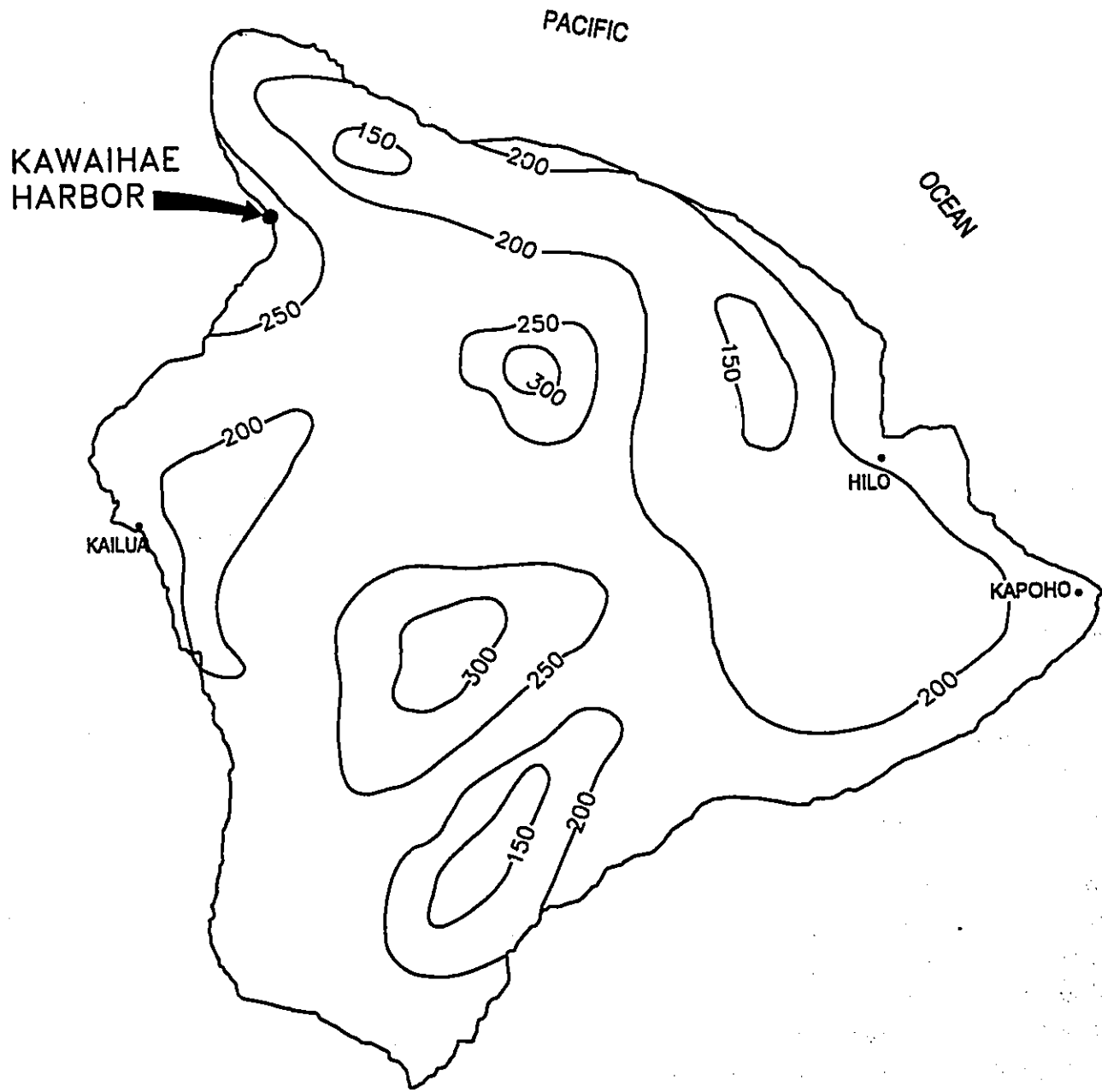
3.1.1 Existing Conditions

Hilo Harbor. Hilo's climate is characterized by abundant sunshine and rainfall, relatively constant temperatures, and the infrequency of severe storms. With a mean annual rainfall of approximately 130 inches, rain falls some 300 days during the year. December through March are the wettest months (SDOT, 1993).

Wind patterns in Hilo are sharply diurnal (having a marked difference between day and evening). Dominant easterly tradewinds prevail during the day (9 a.m. to 8 p.m.). In the evening (9 p.m. to 8 a.m.), cooler westerly winds sweep down the slopes of Mauna Loa. Monthly temperatures in the project area of Hilo Harbor are in the range of 78 degrees Fahrenheit mean temperature in August and 70 degrees Fahrenheit mean temperature in December. Temperatures of 80 degrees and higher are not uncommon throughout the year (University of Hawaii at Hilo, 1998).

Kawaihae Harbor. The general climate of Kawaihae is very arid, with 16.33 inches of rainfall per year (National Climatic Data Center, 2000). The area also is characterized by intense sunlight (FIGURE [10] 21). The harbor is protected from northeasterly storms by the Kohala Mountains and from southerly storms by high elevations to the south (SDOT, 1993).

Kawaihae Harbor frequently experiences windy conditions. Wind speeds vary between 5 and 20 miles per hour, although there can be prolonged periods of higher or lower velocities. Over 35 percent of the time the winds exceed 13 miles per hour (U.S. Soil Conservation Service, 1973). Wind conditions at Kawaihae vary greatly with offshore and onshore breezes, with easterly and westerly directions predominating over 70 percent of the time. During periods of strong tradewinds, wind approaches the area from the east between the Kohala Mountains and Mauna Kea. Kona storms generate occasional strong winds from the south during winter (SDOT, 1993). FIGURE [11] 22 shows the wind patterns around several volcanoes that cause the intense wind conditions often experienced at Kawaihae Harbor. The map indicates that high wind conditions typically occur[ring] in mid-afternoon (approximately 2 pm) (University of Hawaii at Hilo, 1998).



NOTE: WATTS PER SQUARE METER (w/m^2)

Figure [10] 21
 Average Annual Solar Radiation Intensity
KAWAIHAE HARBOR
 Source: University of Hawaii at Hilo, 1998



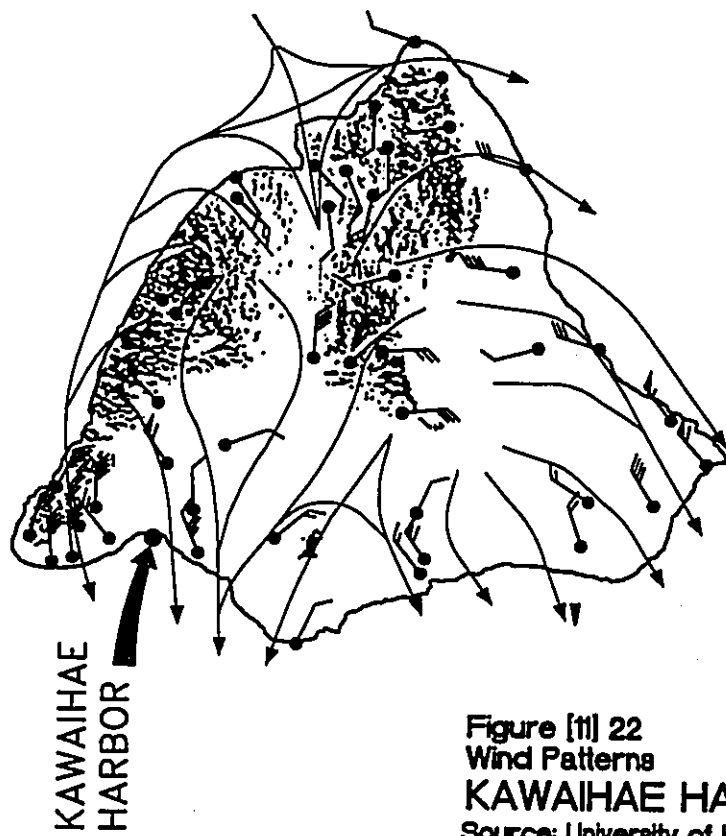
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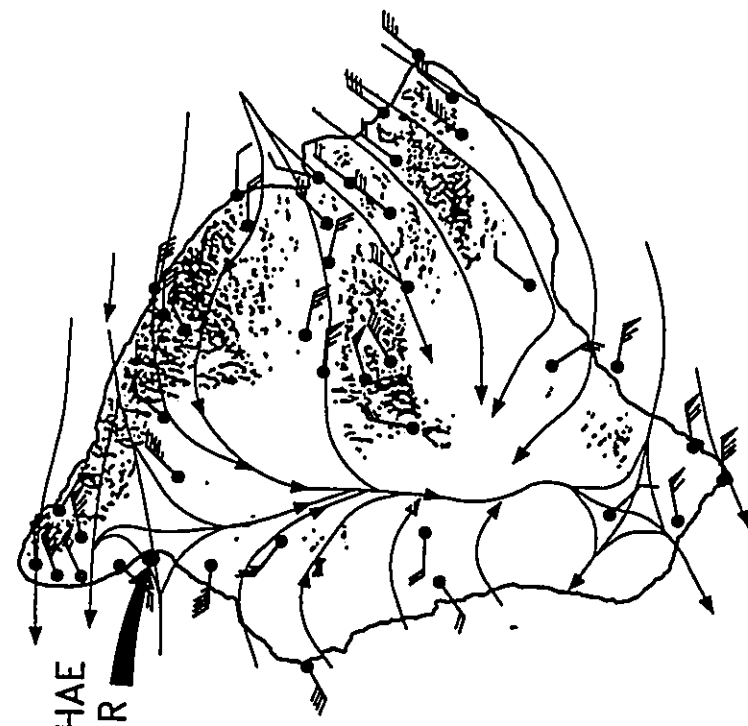
Diurnal Variation in Wind Direction and Speed on Hawai'i Island

2:00 a.m. HST



KAWAIHAE HARBOR

2:00 p.m. HST



KAWAIHAE HARBOR

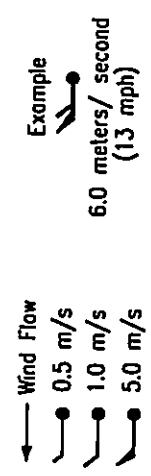


Figure (1) 22
Wind Patterns
KAWAIHAE HARBOR
Source: University of Hawaii at Hilo, 1998

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3.1.2 Potential Impacts

Improvements under the 2020 Master Plan improvements will not affect climate in either location. However, proposed projects will be affected by climatic conditions such as rainfall in Hilo and wind in Kawaihae. Impacts and mitigation measures for these climatic factors are discussed in Section 3.6 NATURAL HAZARDS).

3.1.3 Potential Mitigation Measures

Since there are no expected impacts, no mitigation measures are proposed.

3.2 REGIONAL GEOLOGY, TOPOGRAPHY AND SOILS

Regional Geology. Hawaii, the largest island of the Hawaiian Archipelago, covers an area of approximately 4,000 square miles. The island was formed by the activity of five shield volcanoes (FIGURE [12] 23):

- Kohala (5,505 feet), which is long extinct.
- Mauna Kea (13,784 feet), which has had activity during recent geologic time.
- Hualalai (8,251 feet), which last erupted in 1801.
- Mauna Loa (13,679 feet) and Kilauea (4,040 feet), which are both still active.

Hilo is located on the eastern flank of the Mauna Loa Volcano. Kawaihae Harbor is located on the southwestern flank of the Kohala Mountains (Geolabs, 1999a and 1999b).

3.2.1 Existing Conditions

Hilo Harbor. Hilo Harbor is a relatively flat area (U.S.G.S. Topographical Map). The commercial harbor is situated on land reclaimed from the bay by the placement of coralline fill materials over coralline lagoonal (silt) deposits overlying basalt formations. Based on borings taken from a Board of Harbor Commissioners Drawing dated January 1924, the fill materials of the landside harbor area are underlain by soft mud deposits and loose finger and tree corals extending to depths of about 35 to 60 feet below the existing ground surface (Geolabs, 1999b).

Kawaihae Harbor. Kawaihae Harbor is located at sea level and is a relatively flat area (U.S.G.S. Topographical Map). The site slopes down gently toward Kawaihae Harbor on the southwest and toward a drainage ditch on the northeast. The existing ground elevations at the project site range from approximately +9 to +15 feet Mean Sea Level (Geolabs, 1999a).

Most of the project area is comprised of coral fill from the original dredging of the harbor in the 1960s. Borings taken in 1999 indicate surface fills extending to depths from about 8 to 13 feet below the existing ground surface. The fills encountered generally consist of dense sandy coral

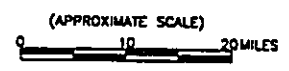
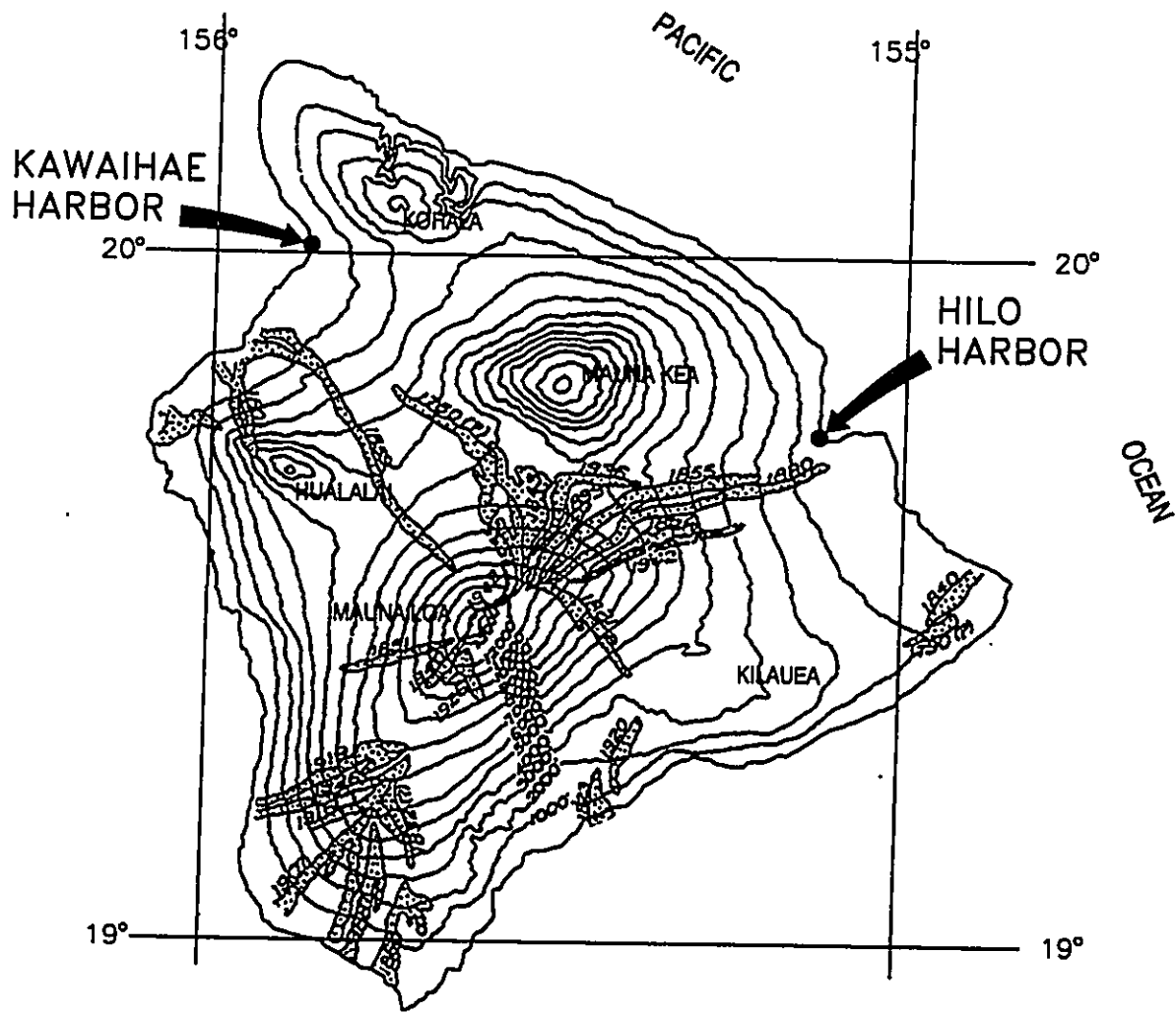


Figure [12] 23
 Volcanoes of the Island of Hawaii
 Source: Stearns, 1946

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gravel and coral gravelly sands with some loose pockets. The fills are generally underlain by lagoonal deposits consisting of loose to dense silty sands and soft clayey deposits extending to the maximum depth of the borings of about 21.5 feet below the existing ground surface (Geolabs, 1999a). The remainder of the site supports kiawe forest on KOC or "Kawaihae extremely stoney very fine sandy loam" soils (U.S. Soil Conservation Service, 1973).

3.2.2 Potential Impacts

The fill soils in the project areas may experience disruption as a result of construction activities such as pile driving as well as drilling and excavations for piers, utilities and drainage improvements.

Planned dredging of berths at each harbor will require disposal of dredging spoils. Harbors Division intends to deposit dredging spoils from Hilo Harbor in the ocean dump site approved by the U.S. Environmental Protection Agency. Stockpiling of dredging spoils of coral on the vacant areas of Kawaihae Harbor would slightly alter the topography. It also would be likely to increase windborne dust.

Planned construction of a liquid bulk terminal in the coral stockpile area of Kawaihae Harbor (see FIGURE 9, CHAPTER 2) will increase the potential for soil contamination from petroleum spills, either from tank leakage or from underground or aboveground pipe leakage.

3.2.3 Proposed Mitigation Measures

Hilo Harbor. Some of the paved areas of Hilo Harbor have been susceptible to subsidence. For example, a recent geotechnical study of concrete structures in the Pier 1 area found that tidal fluctuations, disposal methods for drainage and underground springs may contribute to subsidence (Geolabs, Inc., 1999b). Any paving or repaving of surface areas in Hilo Harbor will have to address this condition in the design.

Harbors Division will apply for all the required permits for disposing of dredging spoils from Hilo Harbor. If the spoils from Hilo are comprised of basalt, the dredging spoils could be reused in the project as crushed material for the base course for pavement. Any basalt spoils could be sent to an asphalt plant for use in making asphalt or [in] to a landfill *for use* as a cover.

Kawaihae Harbor. Based on geotechnical studies at Kawaihae Harbor, dense surface fills encountered at the site should provide good subgrade support for asphaltic concrete and reinforced concrete pavements.

Dredged coral spoils will be stockpiled on-site for use as fill material in future harbor projects. Measures will be taken to prevent fugitive dust from mulching by planting a vegetative cover.

Under the 2020 Master Plan, a new liquid bulk terminal will be constructed in the harbor. Design and construction of all new above-ground tanks will be in accordance with applicable State and Federal regulations concerning placement and construction of these facilities, including underground liners and construction of berms to contain leakage. In addition, design of pipelines to serve the liquid bulk terminal will consider and mitigate the potential for petroleum spills that could result in contamination of the coral fill and underlying soil.

3.3 SURFACE WATER

3.3.1 Existing Conditions

Hilo Harbor. The harbor area has no on-site or adjacent surface water. Hilo Bay does receive surface water runoff from several streams – most notably Wailuku River (AECOS, Inc. 2000). The Wailuku River drains a watershed of some 256 square miles and flows into the outer harbor area (USGS, 2000). The average flow of the Wailuku River into Hilo Bay is about 300 mgd (*million gallons per day*) (Cox and Gorden, 1970).

The Wailoa River, which is classified as a continuous, perennial river, is approximately 1.2 miles from the harbor and is adjacent to Waiakea Pond. Kanakea Pond is approximately 0.7 miles east of the harbor.

Kawaihae Harbor. There are no major surface fresh water discharges into the harbor. Storm water runoff from Makeahua Gulch, located behind the harbor, may occur during storm events. However, this water apparently enters the marine environment behind the breakwater of the small boat harbor, and does not flow directly in Kawaihae Harbor (Woolsey, Miyabara, & Assoc., 1985).

3.3.2 Potential Impacts

Grading of areas to be paved may affect drainage at the harbors. Also, the addition of paved areas in each harbor will increase surface runoff, but is not expected to result in significant adverse impacts. Drainage impact will be more of a factor in Hilo where there is abundant rainfall, surface runoff from streams and periodic flooding.

Increased activity in newly paved terminal areas will increase the amount of oil on the pavement from vehicles and equipment which would flow in water emptying directly into each harbor.

3.3.3 Proposed Mitigation Measures

Design will consider the drainage situation at each harbor before, during and after construction so the surrounding area will not be impacted. A Drainage Plan will be prepared during the design

phase of the proposed projects to ensure that the future storm drainage systems are properly sized.

Pollution control measures will be instituted in conjunction with requirements of the Clean Water Act, including application for a National Pollutant Discharge Elimination System (NPDES) permit. The NPDES Permitting process will require the submission of a Best Management Practices Plan which will address methods of runoff, erosion, and sediment control at the project sites. *Site-specific Best Management Practices (BMPs) will be left up to the project contractor based on the contractor's professional experience and conditions at the site. These are the inspection and maintenance practices that will be used to maintain erosion and sediment controls: All control measures will be inspected at least once each week and following any rainfall event of 0.5 inches or greater. All measures will be maintained in good working order. If a repair is necessary, it will be initiated within 24 hours after the inspection.*

- *Built-up sediment will be removed from silt fences when it has reached one-third the height of the fence.*
- *Silt fences will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.*
- *Sediment basins will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 10 percent of the design capacity and at the end of the job.*
- *Diversion dikes will be inspected and any breaches promptly repaired.*
- *Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.*
- *A maintenance inspection report will be made promptly after each inspection by the contractor and submitted to the Department of Transportation, Harbors Division (DOT-HAR).*
- *The contractor will select a minimum of three personnel who will be responsible for inspections, maintenance and repair activities, and filling out the inspection and maintenance report, and submittal to DOT-HAR.*

Personnel selected for the inspection and maintenance responsibilities will receive training from the contractor. They will be trained in all the inspection and practices necessary for keeping the erosion and sediment controls used onsite in good working order.

Harbors Division will investigate and implement proper methods to mitigate discharge of oil from vehicle exhaust into Hilo Bay and Kawaihae Harbor. Alternatives include:

- Subsurface catchment systems - these are underground tanks into which storm runoff is

collected. Oils in the water are skimmed off before being discharged into the ocean.

- Permanent floating oil boom - this is a more long-term measure in which booms would be placed around storm drainage outlets to confine and retain oily waste from runoff.

3.4 GROUNDWATER

3.4.1 Existing Conditions

Hilo Harbor. The harbor area is not a groundwater source for drinking water (R.M. Towill Corporation, 2000a). Geotechnical borings in the area of Pier 1 conducted in 1999 indicate groundwater was encountered at depths of about 8 to 8.5 feet below the existing ground surface. The groundwater is primarily comprised of seawater. It is likely that water levels encountered in the borings may be influenced by the tide, seasonal precipitation and storm surge conditions (Geolabs, 1999b).

The lava formation beneath Hilo Harbor area appears to be of pahoehoe flow, which is characterized by a smooth, rope-like or billowy surface and an internal structure of vesicular (porous) rock. In general, the basalt formations in the area are considered to be relatively permeable rock and can transmit water quite readily in the horizontal and vertical directions. Water is normally transmitted through the porous rock matrix, along fractures and cavities/voids, and along clinker layers. Therefore, the permeability of the basalt will be highly dependent on the presence of fractures, cavities, and clinker layers (Geolabs, 1999b).

Kawaihae Harbor. The harbor is not a groundwater source for drinking water (R.M. Towill Corporation, 2000b). Vertical stratification of the seawater within the harbor is minimal, indicating that there is relatively little groundwater input to the harbor basin (AECOS, Inc., 2000). Groundwater in the Kawaihae area occurs as a basal water table in saturated volcanic rocks at or very near sea level. Groundwater beneath the harbor area is believed to be highly brackish water that occurs as a thin lens floating over saline groundwater (R.M. Towill Corporation, 2000c).

In a recent geotechnical study of Kawaihae Harbor, groundwater was encountered in the borings ranging from approximately 10.3 to 12 feet below the existing ground surface. Due to the proximity of the Pacific Ocean, groundwater levels are expected to change with tidal fluctuations. Seasonal precipitation, runoff, and other factors may also influence the groundwater levels at the project site (Geolabs 1999a).

3.4.2 Potential Impacts

Hilo Harbor. Although no development of liquid bulk facilities is proposed for Hilo Harbor under the 2020 Master Plan, existing underground pipelines for petroleum products have the potential to leak into groundwater and cause contamination. Although no leakage was documented or observed at Hilo Harbor during a Phase I Environmental Site Assessment in August 2000 (R.M. Towill Corporation, 2000a and Section 3.11.1), it is possible that subsurface contamination exists either on site or from the adjacent fuel handling facilities. If present, this contamination in soils or groundwater may be encountered during construction of proposed pier or building facilities.

Kawaihae Harbor. A Phase I Environmental Site Assessment of Kawaihae Harbor in August 2000 revealed potential ground water contamination due to liquid bulk operations at Kawaihae Harbor. These operations include approximately 15 large, above-ground petroleum storage tanks, dockside petroleum unloading facilities, and pipelines for transporting the petroleum product to storage tanks (R.M. Towill Corporation, 2000b). The proposed development at Kawaihae Harbor includes a new liquid bulk terminal in the current stockpile area (see FIGURE 9. CHAPTER 2). This development will increase the potential for leakage of petroleum product into groundwater and construction activities on the site may encounter contaminated soils or groundwater. These materials will be required to be properly managed during the construction project.

3.4.3 Proposed Mitigation Measures

Hilo Harbor. Harbors Division will continue to periodically monitor environmental conditions in the liquid bulk pipelines of Hilo Harbor to ensure that petroleum leakage does not contaminate groundwater or the ocean.

Kawaihae Harbor. Design and construction of all new above-ground tanks will be in accordance with DOH and EPA regulations concerning precautions such as underground liners and construction of berms to contain leakage. In addition, design of pipelines to serve the liquid bulk terminal will consider and mitigate the potential for petroleum spills that could result in contamination of the coral fill and underlying soil. This will be in concert with the existing Clean Island Council's emergency response plans for spills.

3.5 TRAFFIC AND ROADWAYS

A traffic analysis at Hilo Harbor and Kawaihae Harbor was completed by Julian Ng, Incorporated, traffic consultant, in November 2000. The Traffic Analysis Report, Hawaii Commercial Harbors

2020 Master Plan is attached as APPENDIX B. The purpose of the traffic analysis was to evaluate existing and future traffic conditions in the vicinity of the two harbors and to identify roadway improvements that will be necessary to provide adequate access to the harbors when the 2020 Master Plan improvements are completed.

The "Level of Service" (LOS) concept which was utilized in the traffic analysis to describe traffic conditions is derived from the Highway Capacity Manual. Six levels, using letters A through F, are used to indicate how acceptable traffic conditions are at a given time and place. At the extremes of this scale, Level of Service A indicates low densities of vehicles or no delays and Level of Service F describes very high densities and very long delays at intersections. Levels of Service A, B and C are considered acceptable traffic conditions. *"Density" is the number of vehicles per lane-mile on a segment of roadway. Density is dependent on the number of lanes, volume (rate of flow in vehicles per hour), and speed of the traffic stream (in miles per hour).*

3.5.1 Existing Conditions

Hilo Harbor. The primary access to Hilo Harbor is along Kalaniana'ole Avenue from Kanoelehua Avenue. There are currently two access roads leading into the property. Kuhio Street enters the property at the main gate. A second access road has been paved recently and leads to the container yard used by Matson on the east side of the project site.

The November 2000 traffic study of the vicinity of Hilo Harbor indicated that segments of Kamehameha Avenue east of Kanoelehua Avenue and on Kalaniana'ole Street west of Kuhio Street operate poorly during existing peak hours, due to high volumes on narrow streets. The unsignalized intersections of Kalaniana'ole Avenue with Silva Street and with Kuhio Street are in close proximity with each other and were analyzed as a single unsignalized intersection (see FIGURE 2, CHAPTER 1 for a project site map of the harbor area).

The analyses show very long delays and poor "Level of Service" (LOS) for traffic from Silva Street. All traffic leaving or entering Hilo Harbor passes through the signalized intersection of Kamehameha Avenue and Kanoelehua Avenue. Analyses of this intersection indicate that it is presently operating at under capacity conditions in the AM Peak Hour and near capacity conditions in the PM Peak Hour. Existing levels of service in the vicinity of Hilo Harbor are shown in TABLE 5. On this and the following table, the numbers shown for roadway segments indicate *density* (number) of vehicles; numbers for unsignalized intersections indicate the average delay in seconds; and letters indicate the Level of Service.

TABLE 5
Existing Levels of Service
Vicinity of Hilo Harbor

	AM Peak Hour		PM Peak Hour	
	<u>Density</u>	<u>LOS</u>	<u>Density</u>	<u>LOS</u>
Roadway segments (density, LOS)				
Kamehameha Avenue west of Kanoelehua Ave.				
westbound	18.9	B	20.3	C
eastbound	19.4	B	22.4	C
Kamehameha Avenue east of Kanoelehua Ave.				
westbound	45.0	E	44.8	E
eastbound	50.8	F	45.9	F
Kalaniana'ole Avenue west of Kuhio Street				
westbound	37.8	E	30.4	D
eastbound	32.9	D	28.6	D
Kalaniana'ole Avenue east of Kuhio Street				
westbound	31.0	D	22.0	C
eastbound	24.6	C	23.1	C
Kanoelehua Avenue south of Kamehameha Avenue				
southbound	16.3	B	19.9	B
northbound	16.6	B	18.1	B
Unsignalized Intersection, Kalaniana'ole Avenue, Silva Street, Kuhio Street (average delay in seconds, LOS)				
Kuhio Street approach	18.6	C	12.9	B
left turns to Silva Street	8.8	A	8.6	A
left turns to Kuhio Street	9.6	A	8.7	A
Silva Street approach	163.1	F	57.1	F
Signalized Intersection, Kanoelehua Avenue and Kamehameha Avenue				
Critical Movement Sum	1,188		1,234	
Overall intersection condition	under capacity		near capacity	

Source: Julian Ng, 2000

Kawaihae Harbor. There are currently three access roads leading to the commercial harbor off Kawaihae Road. The middle access road is the primary entrance to the harbor and is used by all industrial vehicles entering the harbor area. The northernmost access road leads to Pier 1, two small sheds and a small container yard. It is not currently used because Young Brothers has moved operations to the area of Pier 2A. The southernmost access road is partially paved. It is used by military vehicles to gain access to the military area LST/LSV (landing ship tank/landing ship vehicle) ramp and by pleasure boaters to access the small boat anchorage area in the commercial harbor.

In Kawaihae, acceptable (LOS C or better) conditions were found for roadway segments and at intersections. TABLE 6 shows the estimates of existing peak hour volumes at Kawaihae Harbor. Unsignalized intersection analyses of these volumes show acceptable existing conditions.

TABLE 6
Existing Levels of Service
Vicinity of Kawaihae Harbor

	AM Peak Hour		PM Peak Hour	
	<u>Density</u>	<u>LOS</u>	<u>Density</u>	<u>LOS</u>
Roadway segments (density, LOS)				
Akoni Pule Highway, north of harbor				
northbound	5.4	A	11.0	A
southbound	10.4	A	10.3	A
Kawaihae Road, south of harbor				
northbound	11.2	A	15.0	B
southbound	11.3	A	15.7	B
Queen Kaahumanu Highway, south of Kawaihae Rd.				
northbound	9.2	A	18.5	B
southbound	17.7	B	15.2	B
Kawaihae Road, east of Queen Kaahumanu Highway				
westbound	20.3	C	16.3	B
eastbound	8.4	A	21.4	C
Unsignalized Intersections (average delay in seconds, LOS)				
Kawaihae Harbor access road at Kawaihae Road				
left turns from Kawaihae Road	7.9	A	7.8	A
left turn to Kawaihae Road	11.4	B	11.8	B
right turn to Kawaihae Road	9.5	A	10.1	B
Queen Kaahumanu Highway at Kawaihae Road				
left turns from Kawaihae Road	8.1	A	8.1	A
left turn to Kawaihae Road	20.4	C	21.5	C
right turn to Kawaihae Road	9.1	A	11.1	B

Source: Julian Ng, 2000

3.5.2 Potential Impacts

Hilo Harbor. Future traffic volumes at the critical intersections near the commercial harbors have been estimated for the year 2020 by factoring existing traffic volumes. Future traffic movements in and out of Hilo Harbor were estimated to increase by 40% over existing volumes as a result of the harbor development planned for year 2020. Other, non-harbor traffic volumes were projected to increase by 30% to 50% near Hilo Harbor.

The conclusion of the traffic analysis was that a single access to Hilo Harbor from Kalaniana'ole Street would be adequate until year 2020. However, the Hawaii Commercial Harbors 2020 Master Plan includes access roads to separate the access to differing functions within the harbor area. Intersection levels of service would be improved if these access roads are provided (Julian Ng, Incorporated, 2000).

Kawaihae Harbor. Traffic volumes in and out of Kawaihae Harbor were estimated to increase 200% over existing volumes. Other, non-harbor traffic volumes were expected to increase by 110% near Kawaihae Harbor.

The conclusion of the traffic analyses for Kawaihae Road is that a decrease in through traffic near the harbor and the addition of a second access road from Kawaihae Road would provide acceptable peak hour conditions along the roadway and at the critical intersections (Julian Ng, Incorporated, 2000). FIGURE 9, CHAPTER 2, shows the location of the three access road intersections.

In Kawaihae, a new two-lane road from Queen Kaahumanu Highway to Akoni Pule Highway that will bypass the harbor area is listed as a Tier 1 *Project* (before 2004) in the County of Hawaii's *Long Range Land Transportation Plan* (1998). Future traffic volumes assuming no bypass highway, a fourfold increase in harbor traffic, and increases in other non-harbor traffic equal to +3% per year for 25 years were projected and these volumes were evaluated. Two roadways into the harbor facilities (each carrying half the harbor traffic) were assumed. A single entrance to the harbor was also evaluated.

The analyses of future conditions at the Queen Kaahumanu Highway intersection with Kawaihae Road show that: 1) traffic signals will be needed and 2) even with signals, the intersection would be near capacity. A bypass highway will provide an opportunity to mitigate these poor conditions. However, if there is no bypass highway, intersection conditions would be acceptable if two access roads were provided (three are included in the 2020 Master Plan). If only a single access road were provided, exiting traffic wishing to turn left would have very long delays (more than 300 seconds to turn left off Queen Kaahumanu Highway to Kawaihae Road) (Julian Ng, Incorporated, 2000).

Regional Transportation Perspective. From a regional transportation perspective, the implementation of the roadway improvements identified in the County of Hawaii's *Long Range Land Transportation Plan* (1998) will be necessary to achieve acceptable peak hour conditions along the project roadways and at the critical intersections. For both harbors, implementation of roadway improvements previously identified in an islandwide study will be necessary to maintain adequate access to the harbor facilities. These improvements include:

- In Hilo, widening of Kalaniana'ole Street (Kamehameha Avenue to Kuhio Street) to five lanes (two in each direction plus a left turn lane) (Tier 1);
- Construction of a new roadway bypassing the Kawaihae Harbor area (Queen Kaahumanu Highway to Akoni Pule Highway) (Tier 1);
- Construction of a new roadway between Waimea and Kawaihae (Mamalahoa Highway to Queen Kaahumanu Highway) (Tier 2); and
- Widening of Queen Kaahumanu Highway south of Kawaihae Road (Tier 3).

"Tiers" were used in the *Long Range Land Transportation Plan* (1998) to identify a timetable for the proposed improvements. Tier 1 projects were to be programmed for construction prior to 2005, Tier 2 between 2006 and 2010, and Tier 3 between 2011 and 2020.

An additional turn lane in Hilo from westbound Kamehameha Avenue to southbound Kanoelehua Avenue also was identified by the EIS traffic consultant as a mitigation measure to improve conditions and provide adequate access. A new project could be identified as "Widening of Kamehameha Avenue (east of Kanoelehua Avenue) to five lanes" (Julian Ng, Incorporated, 2000).

3.5.3 Proposed Mitigation Measures

The conclusion of the traffic study is that the proposed access roads at each harbor will improve traffic flow to acceptable levels, therefore no mitigation is necessary.

- At Hilo Harbor, the 2020 Master Plan indicates that additional access roads will be constructed to separate the access from differing functions within the harbor area. Intersection levels of service will be improved to acceptable levels when access roads are provided.
- Likewise, at Kawaihae Harbor, planned access roads are expected to result in an acceptable level of service through 2020.

From a regional perspective, traffic conditions at the harbors will be acceptable if the improvements listed above are implemented on the schedule indicated by the "Tiers." Harbors Division will monitor the ongoing implementation of these projects by the State Department of Transportation, Highways Division.

3.6 NATURAL HAZARDS

3.6.1 Existing Conditions

The Island of Hawaii is susceptible to five main types of natural hazards; tsunami, volcanic eruption, earthquakes, hurricanes and flooding. Natural hazards such as hurricanes, flooding and tsunami are unavoidable for coastal harbor areas.

- **Tsunami.** Most tsunami affecting the Hawaiian Islands come from sources in the zone of mountain building that borders the Pacific Ocean. Hawaii has experienced nine damaging

tsunami since 1820. An earthquake in the Aleutian Islands caused the 1946 tsunami, which drove water heights to 10 meters at Hilo. The Chilean tsunami of 1960 struck the shore of Hilo Bay at 65 kilometers per hour and drove water to as high as 11 meters (University of Hawaii at Hilo, 1983). A tsunami approached the Kawaihae area in 1946 out of the northwest and destroyed the pier constructed in 1937 (Cultural Surveys Hawaii, 1991).

- **Volcanic eruptions.** Because of its location on the slopes of the active volcano Mauna Loa, Hilo is particularly exposed to the potential hazard of lava flows from volcanic eruption.
- **Earthquakes.** Since the entire Island of Hawaii is in Zone 3 category for seismic activity, Hilo and Kawaihae Harbors share this designation according to the Uniform Building Code. Zone 3 requires public buildings and certain types of private buildings to meet structural design standards for earthquake resistance (Nishimura, 1996).
- **Hurricanes.** Of the eight hurricanes known in the Hawaiian Islands since 1950, only two minor ones, Fico in 1978 and Estelle in 1986, affected the Island of Hawaii (University of Hawaii at Hilo, 1983).
- **Flooding.** Sudden high waves and the strong currents they generate are perhaps the most consistent and predictable coastal hazards in Hawaii (University of Hawaii at Hilo, 1998). Because the subject harbors are coastal facilities, the project sites are susceptible to occasional flooding. Breakwaters at Hilo and Kawaihae Harbors were constructed by the U.S. Army Corps of Engineers to minimize ocean surges and flooding.

Hilo Harbor. Flood zones recorded by the National Flood Insurance Program (FIGURE [13] 24) indicate that the area[s] of Hilo Harbor [are] is susceptible to a 100-year flood, 100-year coastal flood with velocity (wave action) with base flood elevations determined, flood depths of 1-3 feet indicating areas of ponding, and 500-year flood (Federal Emergency Management Agency, 1982). Portions of Hilo Harbor are in a designated tsunami inundation zone. The harbor is also located in a Lava Flow Hazard Zone 3.

Kawaihae Harbor. Kawaihae Harbor is located in flood zones comparable to those described above for Hilo Harbor by the Federal Emergency Management Agency (FIGURE [14] 25). This facility also is in Lava Flow Hazard Zone 3. Wind is a natural hazard at Kawaihae Harbor as well (Section 3.1 CLIMATE). The location of the facility frequently exposes vessels to winds at gale force (34 mph) and above. In the past this has caused occasional damage to barges and small boats berthed at the harbor. Kawaihae Harbor also experiences storm surges from tropical disturbances in the Pacific Ocean.

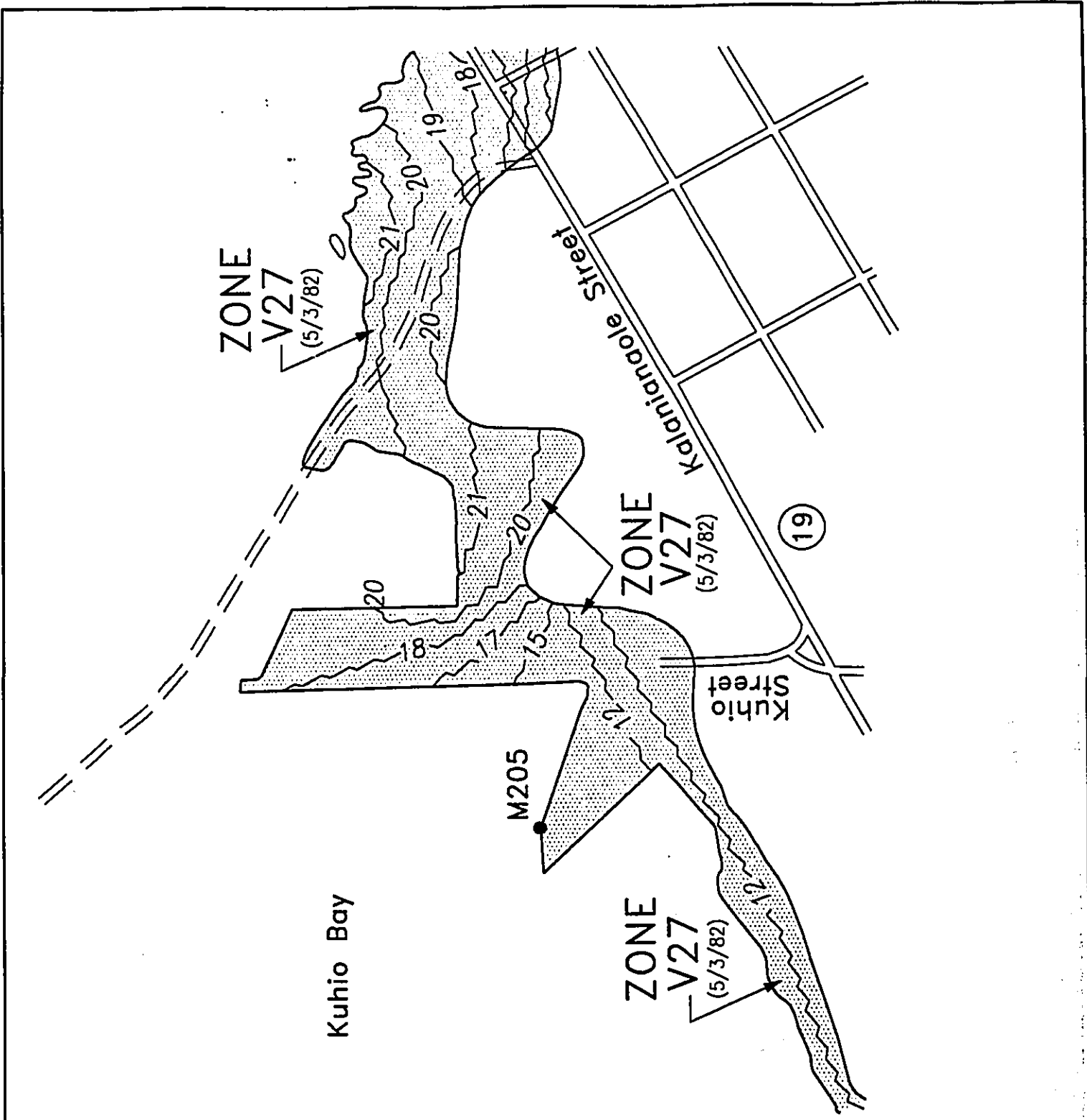
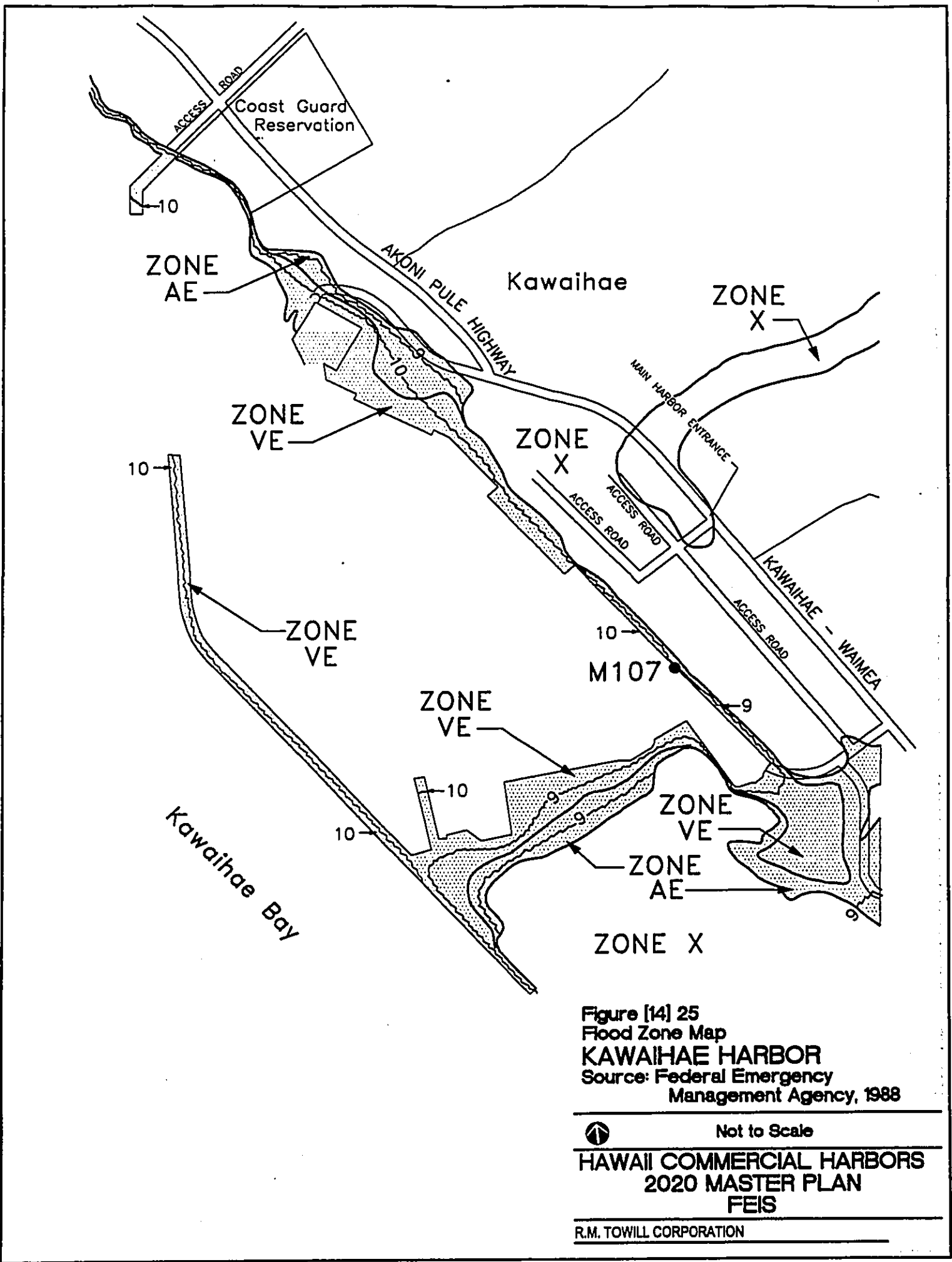


Figure [13] 24
 Flood Zone Map
 HILO HARBOR
 Source: Federal Emergency
 Management Agency, 1988

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3.6.2 Potential Impacts

The more improvements are implemented at the harbors, the more harbor facilities will be susceptible to the various natural hazards listed above.

3.6.3 Proposed Mitigation Measures

To mitigate damage from earthquakes and hurricanes, planned harbor improvements will ensure that new facilities are designed to present codes which offer some protection from damage. To mitigate tsunami and storm surge impacts, engineering analyses will be performed that will determine proper design criteria. On an ongoing basis, personnel at both harbors will coordinate with County of Hawaii Civil Defense to implement established procedures in the event of a flood or tsunami. At Hilo Harbor, design of piers will consider the impacts of harbor surge and wind conditions. At Kawaihae Harbor, design of improvements will consider prevailing strong wind conditions and their potential effect on cargo handling and berthing of vessels.

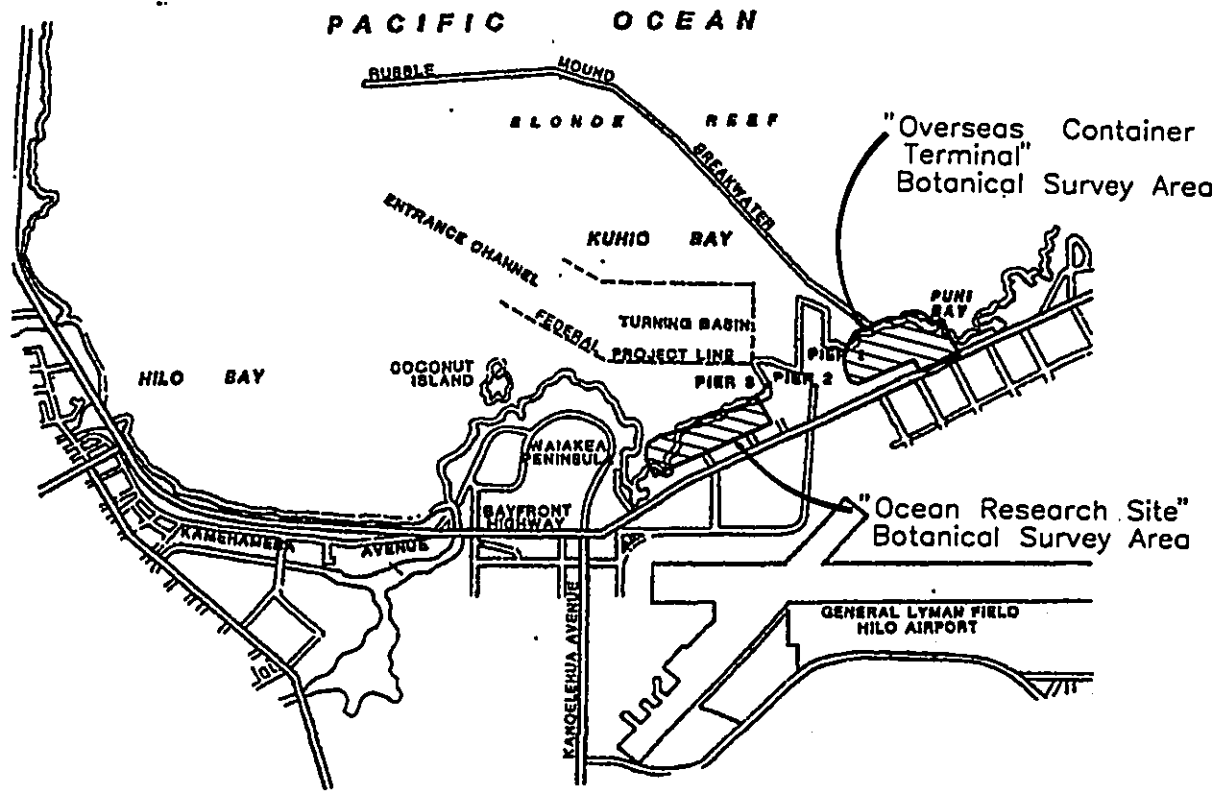
3.7 TERRESTRIAL BIOLOGY

3.7.1 Existing Conditions

Hilo Harbor. Observed fauna include cats (*Felix domesticus*), dogs (*Canis familiaris*), barred doves (*Feopelia striata*), rats (*Rattus ssp.*) and finches (*Cardopacus mexicanus frontalis*) (Palapala, 1994; Corroborated by personal communication, 15-year Hilo Harbor employee, October 2000).

A botanical survey of Hilo Harbor was conducted by Char & Associates, Inc. in September 2000. The Botanical Survey - Hilo Harbor is attached as APPENDIX C. This survey focused on the undeveloped portions of the Hilo Harbor property proposed for the overseas container terminal (Radio Bay) and the ocean research facility (proposed Piers 5 and 6). FIGURE [15] 26 shows the specific areas surveyed.

The botanical survey found that the vegetation on the undeveloped portions of the two surveyed parcels of Hilo Harbor is dominated by introduced or alien plant species such as bingabing, Chinese banyan, California grass, etc. This is not surprising as the two parcels appear to have been disturbed for a long time. Remnants of former structures, such as concrete blocks, were found on both parcels (Char & Associates, 2000).



LEGEND:

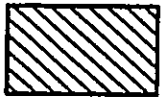
 Areas Surveyed for Botanical Studies

Figure [15] 26
 Areas Surveyed for Botanical Studies
HILO HARBOR
 Source: Char & Associates, 2000a

 Not to Scale
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TABLE 7 summarizes the findings of the botanical survey at Hilo Harbor. A full inventory of all plant species encountered in the survey is included in APPENDIX C.

TABLE 7
Botanical Survey Summary - Hilo Harbor
September 2000

	Number of Species Observed	Percentage of Total
Threatened Species	0	0%
Endangered Species	0	0%
Introduced Species	60	85%
Species Originally of Polynesian Introduction	3	4%
Species Native* to the Hawaiian Islands	8	11%
Total Species Observed	71	100%

* All the native species are indigenous, that is, they are native to the Hawaiian Islands and elsewhere. These plants are the pakahakaha fern (*Pleopeltis thunbergiana*), moa (*Psilotum nudum*), koali'awe (*Ipomoea indica*), seabean (*Mucuna gigantea*), popolo (*Solanum americanum*), hau (*Hibiscus tiliacous*), *Pycreus polystachyos* sedge, and hala (*Pandanus tectorius*).

Source: Char & Associates, 2000

Ocean Research Site

Existing homes and landscaped lawns and plantings cover most of the site. These contain commonly grown ornamental species such as coconut (*Cocos nucifera*), areca palm (*Chrysalidocarpus lutescens*), avocado (*Persea americana*), various croton (*Codiaeum variegatum*) hibiscus (*Hibiscus rosa-sinensis*), plumeria (*Plumeria rubra*) cultivars, papaya (*Carica papaya*), and Alexandra palm (*Archontophoenix alexandrae*).

Overseas Container Terminal

The forest here is from 50 to 80 feet tall and consists of a mixture of trees which include Chinese banyan, ironwood, guaruma (*Cecropia obtusifolia*), melochia (*Melochia umbellata*), bingabing, African tulip tree (*Spathodea campanulata*), mango (*Mangifera indica*), coconut, avocado, and *Eucalyptus* sp. Stands of ironwood, false kamani, and tree heliotrope (*Tournefortia argentea*) are found along the shoreline.

Kawaihae Harbor. As far as terrestrial zoology is concerned, doves (*Feopalia striata*) and cardinals (*Cardinalis cardinalis*) have been observed (Personal communication, Winona Char, 2000). A botanical survey of Kawaihae Harbor was conducted by Char & Associates, Inc. in September 2000. Botanical Survey - Kawaihae Harbor is attached as APPENDIX D. Two vegetation types are recognized on the project site: *ruderal or weedy, wayside vegetation* covering the disturbed portions of the property, and *kiawe forest* occurring on the undisturbed areas. See FIGURE [16] 27 for the area of Kawaihae Harbor surveyed for botanical resources.

TABLE 8 summarizes the findings of the botanical survey at Kawaihae Harbor. All of the plants can be found in similar lowland, dry, disturbed habitats. An inventory of all the plants observed within the two vegetation types is presented in the plant checklist in APPENDIX D.

TABLE 8
Botanical Survey Summary - Kawaihae Harbor
September 2000

	Number of Species Observed	Percentage of Total
Threatened Species	0	0%
Endangered Species	0	0%
Introduced Species	17	77%
Species Originally of Polynesian Introduction	1	5%
Species Native to the Hawaiian Islands and Elsewhere	4	18%
Total Species Observed	22	100%

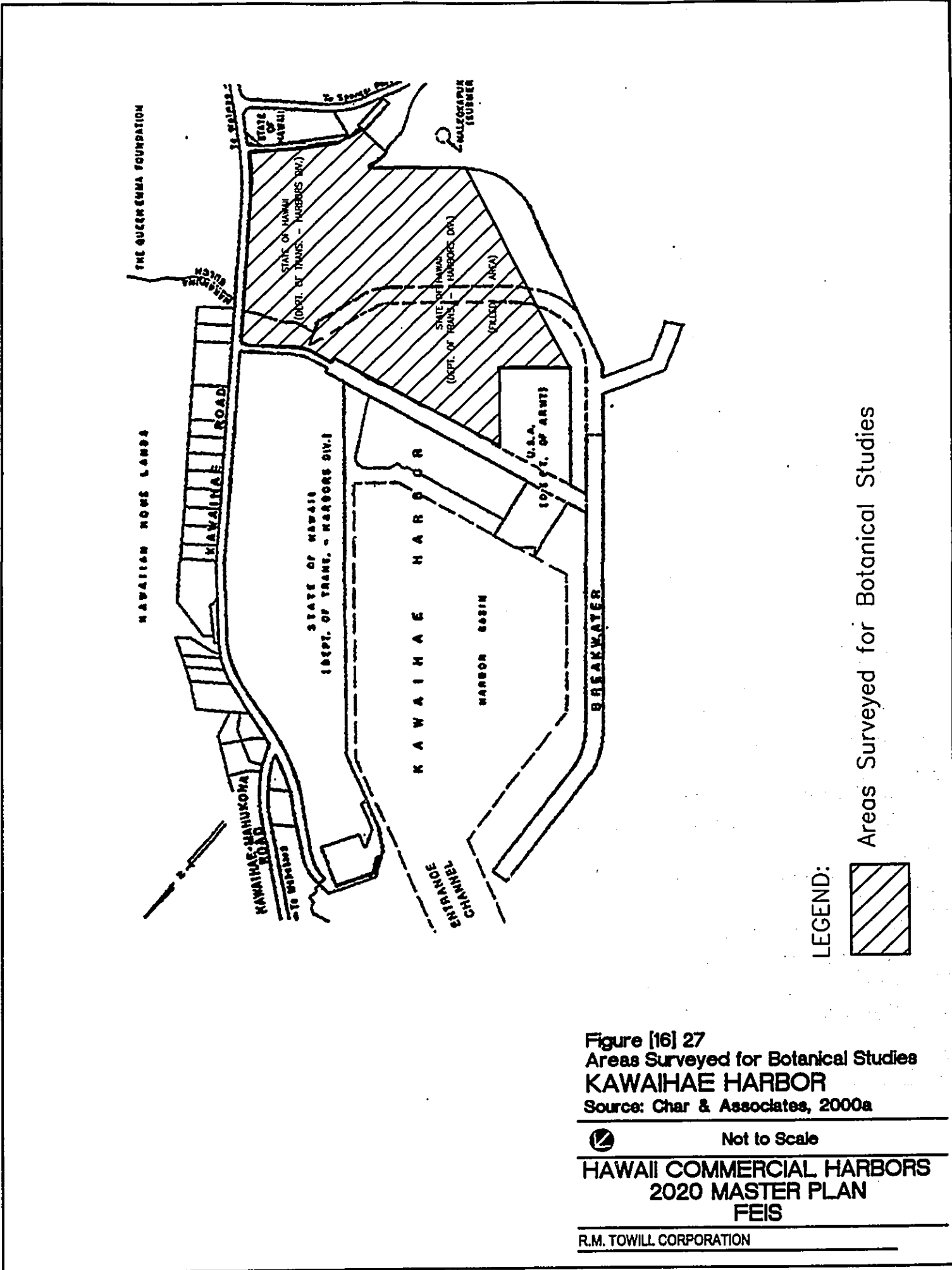


Figure [16] 27
 Areas Surveyed for Botanical Studies
KAWAIHAE HARBOR
 Source: Char & Associates, 2000a

Not to Scale
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Area with Ruderal Vegetation

The fill/stockpile area is proposed for development. The vegetation on this heavily disturbed area is composed of a weedy mixture of species, primarily the introduced buffelgrass and *Atriplex eardleyae* with scattered patches of kiawe.

Ruderal or weedy, wayside vegetation occurs on this disturbed area covered by coral fill. Piles of coral as well as boulders, soil, concrete pilings, etc., are stockpiled on this portion of the project area. Much of the site is barren with vegetation cover of 5% to 20% in most places. Closer to the edges of the disturbed area where it adjoins patches of kiawe trees, the weedy cover is 40% to 50%.

Kiawe Forest

Kiawe forest is found between the coral fill/stockpile area and the highway. The tree canopy cover is closed in most places, i.e., the branches of the trees overlap and cover is 60% or more. The trees are occasionally cut for firewood as evidenced by old stumps and cut branches scattered here and there.

The undisturbed portion of the property, between the fill/stockpile area and the highway, supports kiawe forest; no development is planned for this area.

3.7.2 Potential Impacts

The proposed development of the two parcels is not expected to have a significant negative impact on the terrestrial biological resources. There are no biological reasons to impose any restrictions, conditions, or impediments to proposed development of these two parcels.

3.7.3 Proposed Mitigation Measures

Since no adverse impact is expected, no mitigation measures will be required.

3.8 MARINE BIOLOGY

A survey of marine biology in each harbor area which could be impacted by project improvements was completed by AECOS, Inc., in September 2000. Most of the following information is drawn from Review of Water Quality and Biology for the Kawaihae and Hilo Harbors for the 2020 Master Plan, attached as APPENDIX E.

Marine Biological Research Methodology. Comparable research methodology was used to study the marine biology of both harbors. Using SCUBA, an investigator familiar with the biota found in Hawaiian harbors and on coral reefs in Hawaii conducted a series of dives along the harbor wall and piers and down to the design depth of the harbor (35 feet) noting the dominant algae, invertebrates and fishes that were encountered and recording their identities on underwater paper. For organisms requiring closer inspection to determine their identification, samples were taken, stored in a cooler and held frozen until they could be inspected under a dissecting microscope (AECOS, Inc., 2000).

3.8.1 Existing Conditions

Hilo Harbor. Sections of Hilo Harbor surveyed on September 23, 2000 were: 1) the southeast pier wall and shallow area along the northeast jetty of the small harbor called Radio Bay; 2) from the boulder reinforced shoreline at the east end of Pier 3 along the undeveloped shoreline proposed for Pier 4; 3) the offshore area along the proposed Pier 5-6 alignment; and 4) the pilings at the end of Piers 2-3, where dolphins are proposed to be constructed.

A summary of the marine biological survey results is shown in TABLE 9. The taxa of the 76 organisms recorded on the survey are provided in detail in APPENDIX E.

TABLE 9
Marine Biological Survey Summary - Hilo Harbor
September 2000

	Number of Species Observed
Threatened Species (Green sea turtle, <i>Chelonia midas</i>)	1 <i>(one individual observed)</i>
Endangered Species	0
Microalgae	9
Invertebrates	29
Fishes	24
Total Species Observed	63

Radio Bay

With its lack of circulation with the open ocean, this basin is the most stagnant area in the harbor. This is reflected in the resident biota which is dominated by forms usually found in harbor areas. No invertebrates usually associated with coral reefs were found. The pier wall along the harbor's southeast side extends vertically to the bottom at about 3 meters ("m") (10 feet) depth, where conditions are very turbid with visibility of less than 1 m, and the sediments are extremely fine, jelly-like silt. The prominent feature in the water column is an approximately 1 m (3 ft) thick surface layer of cold, fresh to brackish water that exists to some degree throughout the harbor but is most pronounced in Radio Bay. Virtually no marine macro-organisms occur in the intertidal zone affected by this freshwater lens, which was approximately 5 degrees C (9 F) cooler than the more saline water below. Below this zone the subtidal community is heavily dominated by nonindigenous barnacles, small *Chthamalus proteus* in the upper few cm (inch) of the zone and the larger *Balanus reticulatus* and *Balanus trigonus* below. The balanids are extremely abundant, making up over 95% of the benthic organisms found on the pier wall. The only fish observed in the area were a single jack (Carangidae) and a school of *iao*, *Pranesus insularum* (AECOS, Inc., 2000).

The marine biologist conducting the above investigation encountered what appeared to him to be a rock wall in Radio Bay that he conjectured might be part of a "former fishpond" (AECOS, Inc., 2000). A subsequent dive by qualified archaeologists into Radio Bay to observe this "wall" revealed that the rocks in question were merely construction rubble (Haun & Associates, 2000).

Prospective Pier 4

Observations along this entire shoreline of approximately 550 m (180 feet) recorded 7 macroalgae, 15 macroinvertebrates and 10 fishes for a total of 32 macro-organisms, the largest number that were observed in any of the areas in Hilo Harbor. This area begins at the east end of Pier 3 where the bottom is a rock reinforced sloping wall down to 11m depth where the bottom is fine silt, with some rock rubble at intermediate depths. The rubble-and-rock wall supports abundant macroalgae with a coating of fine sediment. Many invertebrates were found in this area not seen elsewhere along this shoreline, such as two of the only four octocorals that occur in Hawaii, the native *Arbacia bicolor*, and the introduced *Carijoa riisei*. Other invertebrates recorded were various species of sponges and two hard corals *Pocillopora damicornis* and *Montipora capita*, which were present but not common.

This area, called Baker's Beach, is perhaps the only white sand beach in the Hilo area and reportedly was man-made from coral dredged from Hilo Bay between 1925 and 1930 (Sun, Low Tom & Hara, 1977; Kelly et al., 1981). Offshore of this shoreline the bottom flattens out at a depth of approximately 2.5 m (8 ft) with a substratum of pebbles and cobbles in sand and silt. The only

common macrofauna are various sponges growing on the rock surfaces. Further out, the bottom becomes mostly medium to fine white sand with numerous burrow openings interspersed with cobbles and patches of consolidated coral rubble.

Pier 5-6 Alignment

The area in the approximate location of the proposed Pier 5-6 alignment was surveyed by starting about 300 m (1,000 ft) offshore and swimming shoreward on a bearing of 185°. Depth along most of this transect was about 3.5 m (11 feet). The substratum was coarse white sand with intermittent outcrops of coral rubble, both with a fine silt coating. Sand cover became more abundant with approach to the shoreline and was about 95% of the substratum for most of the length of the transect.

Because of lack of solid substratum and vertical relief, few species of macrobiota occurred along this transect. Only three species of algae, 9 invertebrates and 6 fishes were recorded, for a total of 18 species, the second lowest on these surveys. Two uncommon invertebrate species of interest usually occurring on coral reefs were found along this transect, the stinging pen hydroid *Gymnangium hians* and the encrusting hard coral *Psammacora verrilli*.

End of Piers 2 and 3

The area offshore of the end of Pier 3 proposed for location of mooring dolphins is a flat fine silt bottom in 11.5 m (38 feet) depth, with high turbidity and no apparent macrobiota. The pier pilings at the end of Pier 2-3 were inspected and found to have a limited but interesting community of macroinvertebrates and fishes. Only 5 invertebrates and 9 fishes were recorded on or near the pilings. However, these included two introduced invertebrates, the hydroid *Pennaria disticha* and the bryozoan *Schizoporella* sp., not found elsewhere on the survey but are generally common in Hawaiian harbors. Also found here was the introduced octocoral, *Carijoa riisei*, which was otherwise found only at the beginning of the Pier 4 transect and was very abundant on pilings at the end of Pier 3, and the only lobster (*Panulirus pencillatus*) observed on these surveys. Also unique for this station were the fishes the Moorish Idol (*Zanclus cornutus*), the Pennant Butterflyfish (*Heniochus diphreutes*) and the Raccoon Butterflyfish (*Chaetodon lunula*) more commonly seen under reef conditions, and one green sea turtle, *Chelonia midas*.

Kawaihae Harbor. A survey of marine biology in Kawaihae Harbor was conducted on September 16 and 17, 2000 using comparable methodology to that performed for Hilo Harbor and described above under Section 3.8, "Marine Biological Research Methodology." The results of this survey are summarized in TABLE 10. Information about the 116 taxa found in the harbor area may be found in APPENDIX E.

TABLE 10
Marine Biological Survey Summary - Kawaihae Harbor
September 2000

	Number of Species Observed
Threatened Species (Green sea turtle, <i>Chelonia midas</i>)	1 <i>(one individual observed)</i>
Endangered Species	0
Invertebrates	56
Fishes	59
Total Species Observed	116

Due to its location on the leeward coast of the Island of Hawaii and its relative accessibility to unrestricted oceanic circulation, the biotic conditions of Kawaihae Harbor are more typical of near-shore coastal environments than those that might be found in restricted harbors with more turbid and nutrient enriched water masses. Within the harbor, a distinct contrast can be seen between the conditions in the dredged but undeveloped areas such as proposed Piers 3-5 compared with the dredged and developed areas at Pier 2 and the dolphins at proposed Pier 5. In these latter areas, where artificial substrata provide settling surfaces for filter feeding invertebrates, the harbor biota now more closely resembles that in harbors elsewhere in Hawaii. It is likely that the proposed development/expansion within the harbor basin will continue this transition to fewer near-shore coastal invertebrates and fishes, with generally reduced overall diversity (AECOS, Inc., 2000).

The harbor was surveyed for marine biological resources in the following segments (refer to FIGURE 9 in CHAPTER 2 for location of 2020 Master Plan Improvements at Kawaihae Harbor).

Pier 1

A total of 60 organisms was recorded along Pier 1, which included 31 invertebrates dominated by corals and echinoderms, and 29 species of fish. This was the highest number of invertebrates and total organisms observed of the five areas surveyed at Kawaihae, and all were sighted along the relatively short span of coral regrowth corresponding to the area proposed for dredging of existing Pier 1 (AECOS, Inc., 2000). Kawaihae's commercial harbor area was dredged in the 1960s. The coral heads along the existing piers have regrown since that time. Coral may similarly regenerate in the future following proposed dredging of harbor areas.

Pier 2a

In this area numbers of invertebrates decreased from the 31 species (found along the relatively short distance of prospective Pier 1) to 13 species along the entirety of Pier 2a. A similar reduction occurred in the numbers of fish species sighted, from 60 at Pier 1 to 30 along Pier 2a, resulting in a total number of only 60 taxa observed along the entirety of Pier 2a (AECOS, Inc., 2000).

This is the main pier area for the harbor, and it consists of concrete pier pilings about 0.6 m (2 ft) in cross section that extends from the surface down to the harbor bottom at 11 m (36 ft) depth. The deck of the pier is supported by these piers, and the sheet piling wall of the pier is recessed about 10 m from the pier's edge, forming a large area underwater which is dimly lit where the bottom slopes gradually up to the pier wall. The bottom substratum under the pier is coarse sand and water is turbid. These factors have prevented settlement and growth of corals under the pier, although the corals *Montipora capitata* and *Porites lobata* are common on the pier pilings near the edge of the pier where light is sufficient to support them. *M. capitata* colonies on the pier pilings are sometimes quite large, reaching 0.5 m (1.6 ft) in longest diameter. Going eastward along the pier toward the head of the harbor, the dominant biota on the pier pilings changes from near-shore coastal organisms to types more commonly found in Hawaiian harbors, such as polychaetes, tunicates and especially bryozoans (AECOS, Inc., 2000).

Pier 2b Site

The decreasing numbers of species observed along Pier 2a continues in this area, with only 13 invertebrates and 20 fishes recorded, for a total of 33 species in this small area near the head of the harbor. This location also had the highest water turbidity of any area on the survey, which may in part be a factor in the low number of organisms observed, especially for the fishes (AECOS, Inc., 2000).

This area is designated for future expansion as a passenger terminal, research station and/or cargo expansion area. At present it is composed of wooden docks at the east end of Pier 2 that are being used to moor sailboats and other pleasure craft. The docks lie outside lava boulders used to surface the limestone substratum, which extends to 7 m (23 ft) depth at the shoreline. Coral is more abundant here than along Pier 2a. Live coral coverage as high as 30% cover near the surface decreases with depth down to its limit at about 5 m (16 ft), with most of the coral and fishes occurring near the surface at less than 2 m (6 ft) (AECOS, Inc., 2000).

Piers 3-5 (proposed) Site

This area extends along the southeast shoreline of the harbor to the jetty that protects the harbor's seaward side. Planned usage is for an inter-island cargo area (Pier 3) along most of the existing

shoreline and a military cargo area (Pier 4) on the seaward 100 m (300 plus feet), with a small pier (Pier 5) at the beginning of the jetty on the seaward side of the existing LST/LSV ramp (AECOS, Inc., 2000).

Also observed in this area are small mollusk shells [of the species which appear to be gathered by one individual]. According to wildlife biologists at the U.S. Fish & Wildlife Service, these mollusks are common and were most likely dredged from former coral reefs as opposed to something that grows there now (Personal Communication, Kevin Foster, Wildlife Biologist, U.S. Fish and Wildlife Service (USFWS), 2000). According to the head malacologist (shell expert) at Bishop Museum, there are no threatened or endangered intertidal species in the Hawaiian Islands (Personal Communication, David Cowey, Ph.D, 2000). Therefore the mollusks found at Kawaihae Harbor are not considered threatened or endangered.

Off the beach and shoreline rocks, the bottom slopes down at about a 30 degree angle to a coarse sand and rubble bottom at about 5 m (16 ft) depth. Above this depth the substratum is mostly rocky outcrops separated by rock cobbles and coarse sand which continue up to the shoreline which is composed of lava boulders which form the small tidepools. On the hard substratum at 3 m coral is common, ranging from about 25% coverage near the head of the harbor to about 80% near the southwest end of the proposed Pier 3. The boulders and outcrops provide substantial vertical relief and habitat for reef fish and motile invertebrates. Most of the coral coverage on the hard substratum is *Porites lobata* and *Pocillopora meandrina*, but *Pocillopora damicornis*, *Montipora patula*, *Porites compressa*, *Leptastrea purpurea*, *Porites evermanni* and *Pavona varians* were also present. Twenty-five invertebrate species and 34 fish species were recorded along this segment of the survey, for a total of [58] 59 species, the second highest total number on the survey. The area is primarily a marine environment with limited diversity due to it being enclosed and somewhat restricted from the open ocean. Near the northeast side of the LST/LSV boat ramp, coral broadens to be about 50 m (164 ft) wide with approximately 80% coverage of mostly *Porites compressa* down to about 5 m (16 ft) depth, despite high turbidity and fine sediments occurring on the bottom (AECOS, Inc., 2000).

On the other side of the LST/LSV ramp at the proposed site of Pier 5 presently are dolphins with concrete legs that provide habitat for different types of organisms than those occurring along the rest of this shoreline, species that are more typical of harbor biota. This was the only location where the bryozoans *Amathia distans* and *Diaperoecia intricata*, and the ascidian *Herdmania momus* were found. These are dominant organisms in Oahu harbors, and their presence within Kawaihae harbor suggests that they could become more common if additional concrete substratum were to become available from harbor development (AECOS, Inc., 2000).

End of Harbor Breakwater

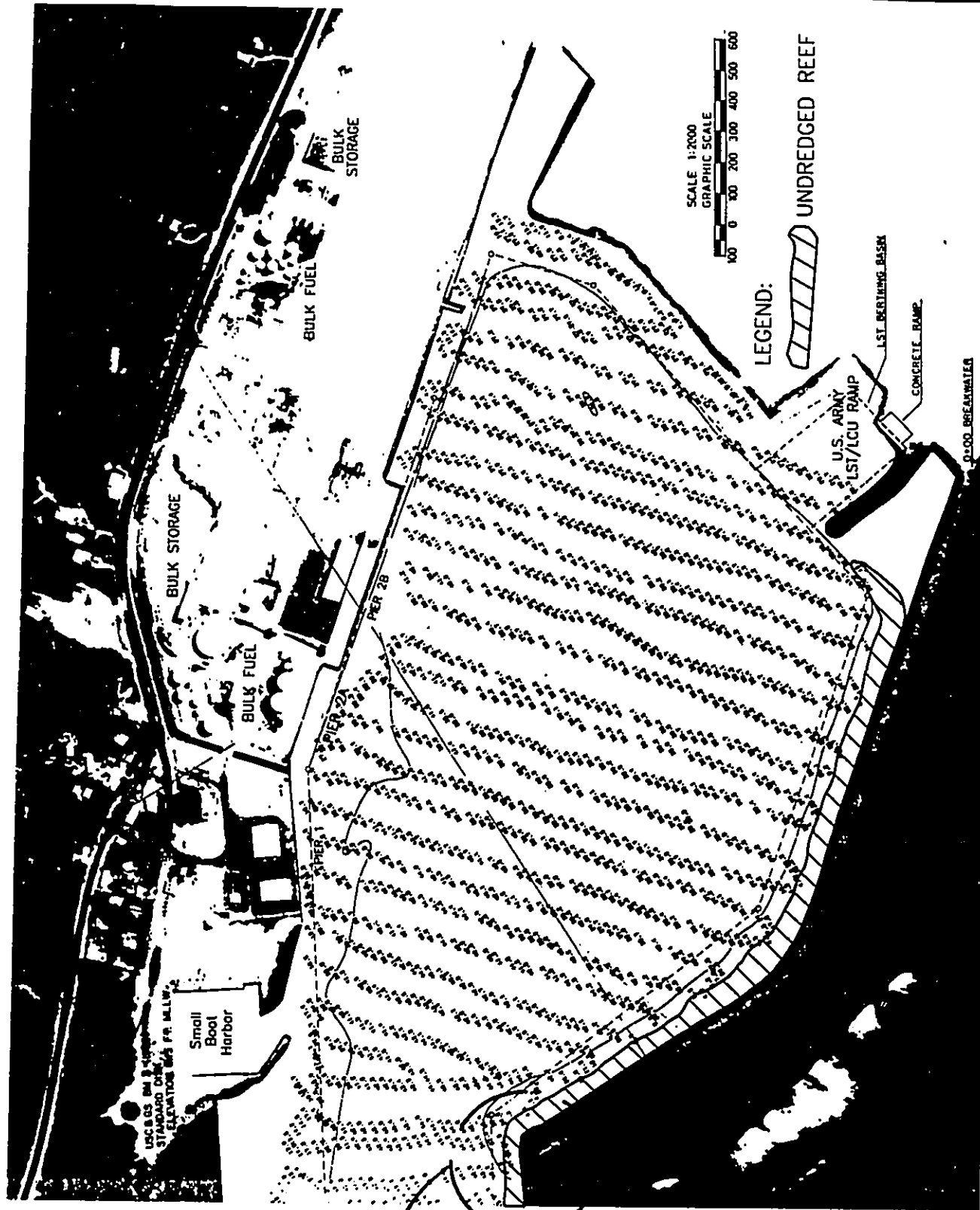
This segment of the survey was conducted on the reef from just inside of the end of the harbor jetty around to its seaward side outside the harbor (FIGURE [17] 28). Despite the relatively small area surveyed in this location of undredged reef, 56 species were recorded, composed of two calcareous algae, 19 invertebrates and 35 reef fishes, the highest number found on the survey (AECOS, Inc., 2000).

In this area the reef rises steeply out of the dredged channel from about 13 m (43 ft) to the reef edge at about 1.5 m (5 ft) depth. Environmental conditions are characterized by high water clarity and abundant coral coverage of about 75% with large coral heads and high vertical relief, which provides substantial habitat and refuge for fishes (AECOS, Inc., 2000).

3.8.2 Potential Impacts

Hilo Harbor. The impacts as a result of the proposed development at Hilo Harbor include:

- **Radio Bay** - (14 taxa observed) Marine life diversity is low in this area because of high turbidity and the water's top 1 m (3 ft) layer of cold, brackish water. Along the proposed new pier in this area, the existing low-diversity benthic community will be replaced by dredging, pile driving and pier construction.
- **Prospective Pier 4** - (32 taxa observed) Observations along this shoreline included the largest number of macro-organisms found in the Hilo Harbor area. This area also contained two of four species of native (but not rare) octocorals. The relatively sparse coral in this area will be subject to dredging, pile driving and pier construction.
- **Pier 5-6 Alignment** - (18 taxa observed) Because of the sandy bottom with outcrops of coral rubble, few species of macrobiota were observed in this area, although two uncommon species of invertebrates were found. The proposed dredging, pile driving and pier construction in this area is not expected to result in any significant adverse impact to marine life.
- **End of Piers 2-3** - (14 taxa observed) This is the area in which the threatened green sea turtle, *Chelonia mydas*, was observed. The benthic community was limited to those that are prevalent along pilings. [Since] [t] This area is slated for the construction of mooring dolphins, which will likely have little impact to marine life because the current macrobiota exist in that environment already.



"End of the Harbor Breakwater" Marine Biology Survey Area

Figure [17] 28
 Location of Undredged Reef
 Kawaihae Harbor
 Source: DOT-Harbors Division, 1999

Scale as shown

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Kawaihae Harbor. The marine biology of the area is likely to be affected by proposed development at Kawaihae Harbor as follows:

- **Pier 1** - (60 taxa observed) Dredging of the pier face area will affect the live coral along the sheet metal piling that forms the harbor wall along the pier. The live coral coverage of 30% on the southern end of Pier 1 will be decreased and more closely resemble the rubble bottom of the rest of the pier after dredging. The dredged areas will also likely have fewer fish.
- **Pier 2a** - (60 taxa observed) Pier 2a's construction does not promote coral growth, so dredging in this area will not have adverse affects on coral. Because the eastward part of Pier 2a currently supports marine animals commonly found in harbors and decreased biodiversity compared to Pier 1, dredging is not expected to have an adverse affect on marine life in this area.
- **Pier 2b** - (33 taxa observed) This area, now a wooden dock, is slated for dredging and pier construction under the 2020 Master Plan. Live coral coverage along Pier 2b mostly occurs only to a depth of less than 2 m (6 ft). The turbidity in this area discourages fish population, so dredging is not likely to decrease fish populations.
- **Piers 3-5 (Proposed)** - ([58] 59 taxa observed) This area is planned for: dredging, pier construction; clearing, grading, paving of terminal area; and construction of sheds. Formed by the dredge tailings material from the original harbor construction, this area is a marine environment with limited diversity because of its enclosure within the harbor and restriction from the ocean. Dredging and excavating will reduce the current coral coverage which ranges from 25-80 [percent]%. The resulting marine community will likely be more like that found commonly in harbors (containing bryozoans and ascidian). Pier and terminal construction along the current shoreline of the coral stockpile will remove or cover small mollusk shells currently common in this area. However, the U.S. Army LST/LSV ramp, in which these shells have been observed, will remain available to the public except when explosives are being loaded or unloaded, a use restriction that is currently in force and will continue for safety reasons.
- **End of Harbor Jetty** - ([55] 56 taxa observed) Although this small area (FIGURE [17] 28) is not slated for development, it contains the most diverse coral reef environment found in the harbor. All remaining coral along the undredged area leading to the jetty area would be susceptible to increased turbidity during dredging (FIGURE [17] 28).
- **Inner Harbor** - This was the area in which the threatened green sea turtle (*Chelonia mydas agassizi*) was observed. It is possible that planned construction activities in the waters of the harbor could harm one of these animals passing through the waters of the commercial harbor.

3.8.3 Proposed Mitigation Measures

Hilo Harbor. The marine biological survey concluded there is low diversity of marine life and coral in the harbor. Most of the benthic community is typical of long-time harbor areas and is not likely to be substantially changed by the proposed harbor development. However, any dredging or pier construction in the harbor should consider the possibility that a threatened green sea turtle

(*Chelonia Midas*) could enter the harbor and be injured by the activity. A siltation curtain around the construction area will prevent any turtle from being harmed by the construction activity.

Kawaihae Harbor. The installation of a silt curtain during dredging and construction will minimize the danger of turbidity within the commercial harbor that could harm the marine life typical of near-shore coastal environments, especially the coral reef environment that exists along the harbor side of the breakwater which is outside past dredgings (FIGURE [17] 28). Because of the nature of this coral reef, a second siltation curtain could be erected as an extra safeguard. Harbors Division also will evaluate the feasibility of transplanting corals that would have been eliminated by the project. This type of transplantation was attempted at Kawaihae in the past as described in Jokiel et al., 1999. Although small mollusk shells will be removed from project areas, the U.S. Army LST/LSV area will provide continued gathering opportunities in the commercial harbor area.

Another mitigation measure to protect undredged coral along the breakwater of Kawaihae commercial harbor will be to plan construction for periods in which coral is not reproducing (spawning). This typically occurs in the summer months, particularly June and July. Because coral species are very predictable in terms of their timing for spawning, determining the approximate timing of their reproductive cycle should not be difficult (Personal Communication, David Gulko, DLNR Division of Aquatic Resources, 2001).

3.9 THREATENED AND ENDANGERED SPECIES

3.9.1 Existing Conditions

Hilo Harbor. None of the terrestrial animals or plants found on the unmaintained portions of the two parcels is a threatened or endangered species or a species of concern (U.S. Fish & Wildlife Service, 1999). All of the plants can be found in similar wet, disturbed, windward habitats throughout most of the main Hawaiian Islands (Char & Associates, 2000).

Only one protected species was observed in Hilo Harbor: the *honu* or Pacific green sea turtle (*Chelonia midas*). The project area is not prime habitat for these species. Turtles may, however, wander into the harbor from Hilo Bay (AECOS, Inc., 2000). The *honu* is protected by both State and Federal endangered species laws[.]. *It is* listed as a threatened species by both the Department of Land and Natural Resources (DLNR, 1998) and U.S. Fish & Wildlife Service (*Code of Federal Regulations* (CFR), 1999; USFWS, 2000).

Kawaihae Harbor. None of the plants found on the unmaintained portions of the two parcels is a threatened or endangered species or a species of concern (USFWS, 1999). All of the plants can be found in similar lowland, dry, disturbed habitats.

The honu or Pacific green sea turtle (*Chelonia mydas agassii*) is the only protected species observed in Kawaihae Harbor. The project area is not habitat for this threatened species, which may, however, regularly wander into the harbor (AECOS, Inc., 2000). This species is protected by both State and Federal endangered species laws[.]. *It is* listed as a threatened species by both the Department of Land and Natural Resources (DLNR, 1998) and U.S. Fish and Wildlife Service (CFR, 1999).

3.9.2 Potential Impacts

It is possible that without proper precautions, one or more threatened green sea turtles could be harmed by planned dredging and pier construction. However, green sea turtle habitat will not be affected because neither harbor is habitat for this animal.

3.9.3 Proposed Mitigation Measures

Because of the occasional presence of a threatened species within both harbors, Harbors Division will maintain close coordination and consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service during project planning and pier construction. The threatened green sea turtle will be protected from dredging and pier construction activities through the use of at least one siltation curtain at each harbor location. This flexible fabric curtain will create a barrier from construction, preventing the turtles from entering an area of potential harm. ***Technologies that would be considered as an alternative to blasting are the use of cutterheads, drag line operations or roadcutters, to dredge designated areas. Other alternatives to blasting, such as technology using pre-drilling and expansion gels to split rock, will also be considered. Construction methodology will attempt to minimize the possibility of inadvertent taking of any green sea turtles.***

3.10 ALIEN SPECIES

3.10.1 Existing Conditions

There are fundamentally two ways in which alien species can be introduced through harbor operations. One is through alien species *in cargo*. The other is the introduction of non-indigenous marine organisms *into harbor waters* by: 1) release during ballast water discharge from a ship, 2) release of "graywater" (water from drains on ships that can contain harmful chemicals) or 3) attachment to the bottom of ships' hulls in what is known as "hull-growth."

Cargo

Overseas and international cargo is currently offloaded and inspected at Honolulu Harbor. It is subsequently loaded onto interisland vessels for transport to Hilo and Kawaihae commercial harbors. Therefore, cargo being offloaded at the two subject harbors has already been inspected

and is therefore less likely to be carrying harmful alien species. Passengers on cruise ships could be considered "cargo." They also can bring in alien species through agricultural products. Another possible cargo problem are "stowaways" such as rats.

Ballast Water Discharge

Ballast water is used to increase a ship's manageability and safety and for maximum sailing efficiency and stability. Ballast water is taken in and discharged by vessels at varying rates and volumes. ***A recent study of marine nonindigenous [introduced] species in Hawaii concluded the following: "Hawaii is a net importer of bulk cargo and manufactured goods, and therefore receives less ballast water than regions that are net exporters of these items" (Godwin and Eldredge, 2001). This is because ballast water is taken on in the loading rather than unloading phase of port operations.*** According to the Hilo Harbormaster, ships do not discharge ballast water in or near either of the subject harbors. ***This is consistent with the fact that the harbors' cargo operations are focused primarily in the offloading process.***

Graywater

Ships discharge "graywater" into the sea which contains used water from drains and showers. Sometimes it also contains harmful chemicals used on ships such as cleaning fluids that can cause damage to marine life.

Hull-Growth

Organisms found growing on the hulls of ships include microscopic invertebrates, barnacles, algae, mollusks and crustaceans. Hull-growth tends to occur when ships stay at anchor or in harbors for extended periods of time, giving organisms a chance to establish themselves. ***Alien species may need little time to transfer from host vessels to other vessels and spread to other harbors. However, the amount of time needed for transfer of organisms is a point of conjecture, even among the experts on this subject.***

It is in ships' best interest to keep biofouling such as hull-growth to a minimum, as it creates friction which increases fuel cost. Hull-growth on cruise ships is discouraged because the cost of building and maintaining cruise ships prompts owners to keep them in service as much as possible. Also, the expectation of cruise passengers to move frequently from port to port decreases the amount of time in any one harbor where hull-growth might have a chance to occur.

3.10.2 Potential Impacts

Hilo Harbor.

Cargo

The threat of alien species introduction through cargo is reduced because nearly all of the overseas goods destined for Hawaii are received and inspected at Honolulu Harbor. The goods are then transferred to interisland vessels rather than foreign vessels and transported to harbors on the Island of Hawaii.

Ballast Water Discharge

Several factors will decrease the threat of successful alien species introduction through ballast discharge. First, 99% of cargo vessels visiting Hilo Harbor and Kawaihae Harbor are interisland barges and tugboats. Any ballast water in these vessels contains only local seawater. Second, ballast water discharge from foreign cruise ships reportedly does not occur in or near the subject harbors. Third, the release of nonindigenous marine species, whether from ballast water or hull-growth, into a new coastal environment does not necessarily constitute their successful introduction. An alien species must have the ability to form established populations to complete a successful introduction. Limiting the number of a given species in ballast water reduces the chances of the successful establishment of reproducing populations in receiving waters.

Discharged ballast water will be seen as a threat nonetheless. Virtually all organisms less than one centimeter in size that are adjacent to the vessel – either swimming naturally, stirred up from bottom sediments, or rubbed off harbor pilings – could be ballasted into a vessel. Such organisms include viruses, bacteria, protozoa, fungi, algae, plants, zooplankton and fish. Locally, the goby species *Mugiligobius parvus* which is indigenous to the Philippines has established itself in Hawaii's coastal waters (NRC, 1996).

Among the plants transported, phytoplankton, especially diatoms and dinoflagellates, have been found to be particularly common in ballast water (Carlton, et. al., 1993). Ciguatera toxin is a poison caused by the nonindigenous marine dinoflagellate *Gambierdiscus toxicus*, which is found in association with certain red and brown algae. *G. toxicus* poisons fish (through ingestion of algae or herbivorous fish) and can cause poisoning in humans when contaminated fish are consumed. Ciguatera fish poisoning has been reported more frequently in recent years because there is an increase in knowledge and awareness of fish poisoning, and there is an increase in *G. toxicus* that come from discharge of contaminated ballast water (Parsons, Brinkerhoff, 1995). In some coastal areas, construction activities have been linked, albeit tenuously, to the increase in the presence

of ciguatera toxin in marine organisms (HOMRC, 1991; Will Chee – Planning, 1999). Hilo Harbor is characterized by physical conditions which are not conducive to proliferation of *G. toxicus*, including high turbidity levels, water temperatures below 25 degrees C, and the influx of groundwater. As a result of these limitations, it is unlikely that ciguatera poses a serious threat as either an invasive species or a human health risk within Hilo Harbor where the vast majority of foreign vessels are expected within the planning period to 2020.

Graywater

Cruise ships might discharge graywater into harbors. Monitoring of this is a function of the U.S. Coast Guard.

Hull-Growth

Cargo. *A recent study of marine nonindigenous species concluded the following: "The ports of Honolulu and Barber's Point Harbor are the hubs of commercial maritime shipping activity in Hawaii, and would be the primary receiving areas for marine nonindigenous species (NIS) transported in this pathway" (Godwin and Eldredge, 2001). Neighbor island ports such as Hilo Harbor and Kawaihae Harbor are not subject to the same level of threat as that experienced by Honolulu and Barbers Point Harbors which are the primary harbor gateways for the State.*

Cruise Ships. The proposed projects will increase the number of foreign cruise ships arriving at Hilo Harbor. This will increase the threat of alien species introduction into that harbor through hull-growth. However, most of the cruise ships entering both subject harbors are part of large cruise ship lines which will likely maintain stricter maintenance schedules on their ships and are concerned with the aesthetic appearance of their ships. Also, the brief visits to ports of call provide poor conditions for introduction of hull-growth.

3.10.3 Proposed Mitigation Measures

Harbors Division will continue to participate in the State of Hawaii Alien Species Task Force to receive the latest information and methods of reducing the threat of alien species introduction.

Cargo

The U.S. Department of Agriculture will continue to inspect agricultural products coming in on vessels, including items passengers may have on board. As needed, they will confiscate illegal agricultural items that could contain alien species. When a foreign cruise ship comes in, the

USDOA will continue to inspect the ship's stores (food), including agricultural products in the kitchen. If prohibited items are found, they will be sealed in refrigerators.

Ballast Water Discharge

At the present time, there are no enforceable laws which regulate ballast water discharge. Concerted efforts are being undertaken by both international organizations and individual governments to establish regulatory mechanisms to monitor ballast water discharge. The main purpose of these efforts is to establish universal regulations which are enforceable in both international and national waters. Such regulations currently passed or in the works include:

- Consultation with DLNR, Division of Aquatic Resources, revealed that a voluntary program is in force in Hawaii under which ships have agreed to exchange ballast water mid-ocean. The U.S. Coast Guard has been enforcing this rule.
- An Executive Order coordinates a federal strategy addressing the environmental and economic threats of foreign marine organisms being discharged into U.S. waters. The order creates an Invasive Species Council that is mandated to develop a comprehensive plan to minimize the economic, ecological, and human health impacts of invasive species and to determine further steps to prevent future introductions (HOISN, 1999).
- ***Under the authority of the National Invasive Species Act, the United States Coast Guard has imposed voluntary guidelines for ballast water management practices, as well as implemented mandatory ballast reporting procedures beginning July 1, 1999 for all vessels entering the United States (Godwin and Eldredge, 2001).***
- In response to the growing trend of state laws regulating ballast water discharges from ships, U.S. ports plan to develop a legislative proposal that would: 1) establish a strong, uniform Federal ballast water management program; and 2) preempt individual state legislation in this area. The objective of the legislation would be to include an amendment to the National Invasive Species Act (NISA) to direct the Coast Guard to make mandatory, with a safety exemption, the current voluntary ballast water exchange provision (AAPA 2000).
- The United Nations - International Maritime Organization (IMO) is a specialized international body devoted exclusively to maritime matters. As part of the continuing efforts to regulate ballast water, the IMO recently developed a draft annex to the International Convention on the Prevention of Pollution from Ships titled, "Regulations for the Control and Management of Ships' Ballast Water and Sediments to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens" (HOISN, 1998).

Until such time that enforceable ballast water regulations are established and promulgated, ships entering the subject harbors should, when practicable, comply with the existing "voluntary ballast water guidelines" established by the IMO. These guidelines are intended to assist governments and appropriate authorities, ship masters, operators, owners, and port authorities in minimizing the

risk of introducing harmful aquatic organisms, pathogens, and associated sediments from ships' ballast water while protecting ships' safety (IMO, 1996).

Particular attention should be given to the "Ships' Operational Procedures" contained in the IMO guidelines. This section outlines specific precautionary practices and ballast water management options. Specific procedures which would reduce the release of alien species include:

- Minimizing the uptake of harmful aquatic organisms, pathogens, and sediments - Avoidance of loading ballast in very shallow waters where propellers stir up sediments and in the darkness when bottom-dwelling organisms may rise up in the water column.
- Removing ballast sediment on a timely basis - Routine cleaning of ballast tanks should, when practicable, be carried out in mid-ocean and in accordance with the provisions of the ships' ballast water management plan.
- Avoidance of unnecessary ballast water discharge - Care should be taken to avoid unnecessary discharge of ballast water that has been taken up in another port.
- Practicing of sound ballast water management options - This includes, when practicable, deep water/open ocean ballast water exchange, non-release or minimal release of ballast water, discharge to reception facilities, *and* use of emergent [and new] technologies and treatments.

Technological Measures for Ballast Water Discharge

Once ballast water has been loaded on board, the ideal mechanism for preventing subsequent introductions of nonindigenous aquatic species is to kill or remove the organisms prior to discharging ballast water overboard. This could be achieved by utilizing onboard chemical, physical, biological, or mechanical treatment technologies. There are numerous promising treatment technologies emerging, a few of which are listed below (IMO, 1996):

- Filtration systems
- Oxidizing and nonoxidizing biocides
- Thermal techniques
- Electric pulse and pulse plasma techniques
- Ultraviolet treatment
- Acoustic systems
- Magnetic fields
- Deoxygenation
- Biological techniques

Each of the above technologies, whether utilized individually or in combination, would achieve the goal of neutralizing potentially harmful alien species in an environmentally safe manner before they are discharged into receiving water.

Graywater

Harbors Division will monitor ships in port and report any suspicious happenings to the Coast Guard and/or the State of Hawaii Department of Health. Dockside tanks could be considered for offloading graywater for transportation to nearby sewage treatment plants.

Hull-Growth

Most vessels adhere to regularly scheduled hull cleaning activities as a part of their preventive maintenance program. The State of Hawaii does not currently have a formal program for inspecting hull-growth. In consultation with DLNR, Aquatic Resources Division, it was suggested that the State could consider implementing a program in which either random hull inspections are performed or regular inspections are made at the time a ship enters the harbor.

Regulatory Oversight of Alien Species in Hawaii

The government agencies responsible for dealing with alien species are shown in TABLE 11.

TABLE 11
Regulatory Oversight of Alien Species Control and Introduction in Hawaii

Agency	Overview of Responsibility
United States Department of Agriculture	Inspection and clearance of agricultural items (plant materials and pests) on foreign arriving vessels. Refers some plant pest dispositions to Hawaii Department of Agriculture.
United States Department of the Treasury U.S. Customs Service	Boarding and clearance of foreign arriving vessels, passengers, crew and cargo. Refers plant materials to U.S. Department of Agriculture or State of Hawaii Department of Agriculture and refers animals or animal parts to U.S. Fish and Wildlife Service.
United States Coast Guard	Jurisdiction over all maritime vessels (commercial, private, foreign, U.S. flag ships). Oversees hazardous materials in transit and assists or refers contraband to other federal or state agencies for disposition.

Agency	Overview of Responsibility
United States Department of the Interior Fish and Wildlife Service	Inspection and clearance of wildlife (animals and parts) including alien species and protected, threatened or endangered species on foreign arriving vessels.
State of Hawaii Department of Agriculture	Inspection and clearance of agricultural items (animals, microorganisms, plants and plant parts) on domestic arriving vessels. May take appropriate action on foreign arriving items upon referral by federal agency.
State of Hawaii Department of Land and Natural Resources	Jurisdiction over the unintentional introduction of non-native aquatic species in ballast water and hull-fouling organisms (hull-growth) on all arriving vessels.

Source: Consultation with State of Hawaii, Department of Agriculture and U.S. Fish & Wildlife Service, 2001

3.11 SOLID WASTE AND HAZARDOUS MATERIALS

3.11.1 Existing Conditions

Solid Waste

Information in this section was provided during consultation with the County of Hawaii, Department of Public Works, Solid Waste *Division*, the U.S. Department of Agriculture (USDOA) and the Hawaii Island Harbormaster.

Hilo Harbor. Solid commercial and industrial waste generated at Hilo Harbor is collected by private waste collection companies and transported to the Hilo Landfill. According to County of Hawaii sources, this landfill is unlined and therefore out of compliance with U.S. Environmental Protection Agency regulations. Ordered to be closed several years ago, the County of Hawaii has applied for annual extensions for the Hilo Landfill to remain open.

At Hilo Harbor the solid waste generated by both U.S. and foreign cruise ships is normally held on the vessels. Solid waste must be stowed according to USDOA regulations. If any type of wet garbage (leftover foodstuffs) must be offloaded in Hilo, foreign ships must place it in plastic bags and put in a refrigerated container. USDOA supervises the loading of wet garbage, locking of the container and shipping to Honolulu where it will be sterilized. Dry garbage, pallets and cardboard from all ships can be offloaded and disposed of in Hilo.

Kawaihae Harbor. Solid waste is collected by private firms from Kawaihae Harbor and transported to the West Hawaii Landfill. Constructed in 1993, this landfill has a design approved by the U.S. Environmental Protection Agency and a useful life of 30 years.

Hazardous Materials

Hilo Harbor. In August 2000 R.M. Towill Corporation assessed potential environmental contamination by hazardous materials at Hilo Harbor. The Phase I Environmental Site Assessment - Hilo Harbor is attached as APPENDIX F.

A site reconnaissance of the property performed on August 9, 2000 found no significant, observable hazardous material-oriented environmental conditions connected with the Hilo Harbor property. This assessment was conducted to determine whether conditions or situations at the site might result in present real or potential hazards, or environmental liabilities as dictated by federal, state, and local statutes and regulations. Specific areas investigated included: historical uses of the subject property; signs of gross surface contamination; hazardous materials and wastes; and the presence of equipment containing polychlorinated biphenyls (PCBs), and underground storage tanks (USTs).

Kawaihae Harbor. R.M. Towill Corporation (RMTTC) assessed possible environmental contamination at Kawaihae Harbor in August 2000. Phase I Environmental Site Assessment - Kawaihae Harbor is attached as APPENDIX G.

The site reconnaissance at Kawaihae Harbor found only one observable, adverse environmental condition connected with the property: the Akana Petroleum site has spilled petroleum product on the surface of the soils in their property. The site is bermed to prevent surface run-off of the oils. No information on the presence of a liner to prevent ground water contamination was found.

The harbor property contains several operations that may also potentially contribute to adverse environmental conditions, however, records available at the time of this report did not reveal any problems identified to date. These operations include approximately 15 large, above ground petroleum storage tanks, dockside petroleum unloading facilities, and pipelines for transporting the petroleum product to the storage tanks. The potential exists when these facilities may have leaked causing soil and ground water contamination.

3.11.2 Potential Impacts

Solid Waste

Hilo Harbor. Additional solid waste will be generated with the proposed increase in commercial maritime operations, particularly from interisland cruise ship operations. The County of Hawaii is currently evaluating several alternatives for handling solid waste after the Hilo Landfill closes, which appears imminent (Section 3.11.1). The most likely scenario for handling Hilo's solid waste is to use a central processing station, in which solid waste is sorted then transferred 90 miles by truck to the West Hawaii Landfill.

Proposed construction activities would require land clearing, demolition of existing structures, excavation, drilling, and pile driving operations. These activities would generate construction and demolition (C & D) waste consisting of wooden beams, asphalt, concrete, glass, brick, metal, soil, vegetation, and other miscellaneous building and landscaping materials. These materials will be shipped to the West Hawaii Landfill.

The proposed project will increase the amount of solid waste generated at Hilo Harbor. However, it is not expected to adversely impact solid waste disposal capacities. Planned alternatives to the Hilo Landfill will provide the needed additional capacity to handle solid waste generated by harbor activities. Interisland cruise ships and other harbor users could engage in active recycling that would divert solid waste away from the landfills.

Kawaihae Harbor. Kawaihae Harbor improvements will not result in a significant increase in commercial and industrial solid waste. The capacity of the West Hawaii Landfill is adequate for the period until 2020, although this expected life may be shortened when solid waste from Hilo is transferred to the West Hawaii landfill. Land clearing, demolition of existing structures, excavation, drilling, and pile driving operations at the harbor would generate construction and demolition waste. This waste will be transported to the West Hawaii Landfill.

Hazardous Materials

Hilo Harbor. The following potential environmental concerns were identified during the Phase 1 - Environmental Site Assessment conducted at Hilo Harbor:

- There is a large number of aboveground and underground storage tanks in the harbor vicinity. Potential exists for leakage of petroleum product to the soils and ground water in this area. No evidence was noted to verify this possibility, since no sub-surface investigations were performed for the Phase I Environmental Site Assessment.
- There is a large system of piping that carries the petroleum product from ships at the piers to

the storage tanks. These pipes may leak causing contamination of the soils and ground water in this area. No leakage was observed or documented, however additional investigation may be required to verify this potential problem. Construction of new underground pipelines in support of proposed harbor development will cause further exposure to contamination. Some of the buildings at the harbor contain asbestos-containing building materials. No thorough study was performed to determine the extent of the presence of asbestos or lead-based paint. (R.M. Towill Corporation (RMTC), 2000)

Kawaihae Harbor. Based on the available information reviewed, the Phase I Environmental Assessment concluded that the only significant potential for environmental liability on this property is the presence of the underground storage tanks, above ground petroleum storage tanks, associated piping and loading facilities and surface contamination present at the Akana Petroleum property.

As a result of the hazardous substances (asbestos and lead-based paints) present in buildings to be demolished, demolition could result in the release and spreading of such contaminants into the environment. Excavation equipment could damage or rupture remnant underground storage tanks or fuel lines.

Potential adverse impacts to construction personnel include possible exposure to both known and unknown hazardous materials and wastes present in existing structures or the surrounding environment.

3.11.3 Proposed Mitigation Measures

Solid Waste

Potential impacts to the Hilo Landfill in the short term and the West Hawaii Landfill in the long term can be minimized through recycling efforts. Harbors Division will actively encourage recycling efforts by interisland cruise ships, as they are and will be the largest contributors to additional solid waste at Hilo Harbor. Harbors Division will also encourage the use of on-board incinerators on interisland ships. Interisland cruise ship operators have not yet begun such upgrades but are planning to do so. On-board incinerators would reduce the amount of solid waste generated by cruise ships and would allow them to hold larger quantities aboard the vessel for longer periods of time.

During the design and construction phases of the proposed improvements, Harbors Division will develop and implement a construction and demolition recycling plan. A recycling program would effectively recover building materials which could contain potentially hazardous substances (such

as batteries, mercury containing thermostats, asbestos, liquid wastes, oils, paints, solvents, refrigerant fluids, tires and liquid filled transformers) and prevent them from being disposed of in an unlined landfill. [The construction and demolition recycling plan would also consider the designation of Harbors property and infrastructure development for industries such as reuse, recycling, and remanufacturing that depend heavily on interisland, interstate and international shipping.]

Foreign solid waste generated by carriers, which left foreign ports and their first port of entry to the United States is Hawaii, must comply with the U.S. Department of Agriculture regulations cited in the DEIS. The Office of Solid Waste Management regulates facilities that process foreign wastes for disposal within the state. Therefore, all foreign waste removed from ships shall be directed to a State Department of Health permitted foreign waste facility. Other wastes (e.g. domestic municipal solid waste) generated aboard domestic cruise ships shall also be disposed of at a State permitted solid waste facility.

Any final disposition of incinerator ash generated by on-board incinerators of cruise ships shall be disposed of at a State Department of Health (DOH)-permitted municipal solid waste (MSW) ash monofils or other permitted disposal facilities approved by DOH to accept solid waste ash. Any cruise ship firm wishing to dispose of solid ash waste would have to meet federal Resource Conservation and Recovery Act, Subtitle D requirements as imposed by individual DOH-approved landfills or disposal facilities.

Hazardous Materials

All known utilities and underground pipelines will be identified by the demolition and construction contractor and subsequently disconnected or removed prior to site work. All fuel storage tanks, hazardous materials (including asbestos building material and lead-based paint), and transformers (potential sources for polychlorinated biphenyls (PCBs) present in structures planned for demolition, will be managed in accordance with measures agreed upon by the State Department of Health (DOH). These measures may include the removal, on-site stabilization, and if feasible recycling of hazardous materials to avoid the potential for release into the environment.

An inspection will be performed in the harbor buildings to determine if these contaminants are present on the property to assist future construction and demolition projects.

Construction of buried pipelines will be in accordance with established codes that call for double containment of pipelines carrying hydrocarbons. Corrosion-resistant materials and leak detection stations must be used. Design and construction of new inground or underground storage tanks will conform to current regulations concerning berms and liners.

Additional environmental investigation will be undertaken if excavation or earthwork is proposed for areas identified with hazardous materials on the Akana Petroleum site. These investigations would involve the determination of the extent and concentration of petroleum hydrocarbons in work areas. If identified, these contaminated materials would require proper management, treatment or disposal, and proper worker protection during the work.

A site-specific Health and Safety Plan will be prepared prior to construction. The plan will identify safe working conditions for construction in areas of known flammable products and/or vapor contamination. The contractor is required to comply with all conditions of the Health and Safety Plan, which will ensure that workers will not be exposed to unacceptable safety risks. Compliance with the site-specific Health and Safety Plan, DOH Regulations, and other permit requirements, will assure that no significant impacts from hazardous materials or site contamination will occur during construction activities or facility operations. Safety measures will include proper techniques for monitoring the presence of flammable vapors in the air, response protocol, personal protective equipment, use of allowable tools, and mechanical measures, as appropriate.

The potential for petroleum contamination will be addressed during the project design and construction phases and incorporated into contract and bid documents. Where appropriate, the design and construction phases will be completed in compliance with *Guidance on Construction Activities Encountering Area-Wide Petroleum Contaminated Soils* (DOH Guidance) and other applicable Federal and State laws and regulations.

The contractor shall be responsible for taking the safety, contamination management, and documentation actions required by the DOH Guidance on Construction Activities. Compliance with the DOH Guidance involves the protection of workers and public health and safety; immediate notification of the DOH; documentation of the locations of contaminated areas; and proper management of contaminated excavated materials.

It is expected that most of the excavated materials will be returned to trenches and safely covered on-site. However, if some contaminated materials cannot remain on-site, they will be sampled, analyzed, and appropriately disposed of at DOH-approved facilities. Transport of the materials will also comply with State and Federal regulations regarding the transport of hazardous or petroleum contaminated materials. It is expected that a minimal amount of material will be removed from the property. Disposal of the materials will also comply with all State requirements and site-specific permits at the disposal site.

Normal operations at the proposed project sites would not expose the public or site workers to hazardous substances. Tenants on the site will be required to inform workers, through regular training sessions and use of operational manuals, about standard procedures for use of all equipment, especially equipment which may contain or use hazardous materials. Training will

identify procedures to follow in the event of equipment malfunction or other emergency. Thus, no significant long-term impacts associated with exposure to hazardous materials are anticipated.

3.12 UTILITIES

3.12.1 Existing Conditions

The two harbors are industrialized areas served by a variety of public services and utilities including energy and communication, water supply, wastewater collection and fire protection.

Energy and Communication

All of the proposed project sites are provided with electrical and telephone services by Hawaii Electric Light Company (HELCO) and Verizon Hawaii (formerly GTE Hawaiian Tel), respectively. Most of the existing structures on the project sites were not designed with energy efficiency standards in mind.

Water Supply

For both harbors, water supply for the proposed improvements will be dependent on the adequacy of water source, storage and transmission facilities provided through the County of Hawaii's Department of Water Supply.

Hilo Harbor. Until 1998, Hilo Harbor was served by water lines owned by the Department of Water Supply. Now Harbors Division owns the water lines from the main water meter. Harbors Division distributes water to harbor users and tracks usage through an internal meter system for the harbor. Six pipe outlets for water are located on Pier 1 and additional ones on Piers 2 and 3.

Kawaihae Harbor. Kawaihae Harbor facilities are also served by the County of Hawaii, Department of Water Supply. Per the County of Hawaii, Department of Water Supply, a 12-inch water main that will provide improved fire protection to the harbor *was completed in* first quarter 2001. Harbors Division operations are served by three water meters. Major harbor tenants such as Young Brothers, Brewer Chemical, Akana Petroleum and Hawaiian Cement also maintain individual meters.

Wastewater Collection

Hilo Harbor. Hilo Harbor is connected to the County of Hawaii sewer system. Wastewater charges are unique for the harbor because although water [enters] *is provided to* the harbor for distribution to users, most of the consumption goes into cruise ships which do not in turn produce

wastewater that empties into Hilo's sewer system. A fee arrangement based on this unique situation is in force between Hilo Harbor and the County of Hawaii and renewable annually.

Kawaihae Harbor. At Kawaihae, wastewater is handled by cesspools located beneath the pavement alongside existing sheds and office buildings.

Fire Protection

Both harbors are protected by the County of Hawaii Fire Department.

Hilo Harbor. This harbor is currently served by the Waiakea Fire Station with an estimated response time of three minutes. Hydrant capacity at the harbor is 800 gallons of water per minute. There is currently no fire hydrant within the property. The harbor also has sprinkler systems in the two pier sheds fed by the harbor's water tower.

Kawaihae Harbor. The fire stations nearest to the harbor are located in South Kohala, with a 12-15 minute response time, and Waimea, with a 20-25 minute response time. According to the County of Hawaii Fire Department, the space between hydrants should be no more than 300 feet. Currently, there is 700 feet of space between two of the hydrants serving Kawaihae Harbor.

3.12.2 Potential Impacts

Energy and Communication

The operation of the proposed projects will result in the increased consumption of electricity. All of the proposed project sites will be equipped with telephone communication systems. These systems will not affect the existing communication systems in the project areas.

Water Supply

The potable water demand for the proposed project areas will increase as a result of the more frequent arrivals of cruise ships. Industrial and commercial uses planned at the harbors will require only minimal usage of water for day-to-day activities. The existing water supply system at Hilo Harbor and the recently upgraded water system at Kawaihae Harbor will be able to accommodate projected needs.

Wastewater Collection

Most of the increase in water usage will be for cruise ships, which do not require wastewater collection. Facilities expansion at Kawaihae Harbor will require additional capacity to handle

wastewater, although it will be limited to the facilities provided to employees of commercial harbor-related businesses.

Fire Protection

Hilo Harbor. County of Hawaii Fire Department officials report that additional access will be needed to provide adequate fire protection for the proposed Pier 4, 5 and 6 and Ocean Research facility. The addition of fire hydrants also will have to be evaluated.

Kawaihae Harbor. The recent upgrade in water supply to the harbor has increased fire fighting capacity. However, the spacing of fire hydrants is considered inadequate.

3.12.3 Proposed Mitigation Measures

All of the existing utilities and public services are expected to be sufficient. No significant adverse impacts to existing utilities and public services are expected, and no additional mitigation measures are anticipated to be necessary.

Energy and Communications

Proposed project buildings, activities, and site grounds will be designed with energy saving considerations in mind. Energy usage at the proposed project sites will be designed in accordance with Hawaii Revised Statutes, Chapter 343 (State Environmental Policy) and Chapter 226 (State Planning Act). Section 226-18(4), which establishes the promotion of cost-effective energy conservation through the adoption of energy efficient practices and technologies will be given particular attention.

The energy conservation methods which could be considered during the design phase of the proposed projects may include, but are not limited to:

- Maximum cooling load through the use of site shading, orientation, and use of naturally ventilated areas;
- Use of high efficiency indoor and outdoor lamps and lighting;
- Maximum integration of day lighting in building design; and
- Design *of* mechanical systems to comply *with* energy conserving requirements.

Water Supply

The County of Hawaii, Department of Water Supply has indicated that the existing water supply system is adequate to accommodate the proposed Hilo Harbor and Kawaihae Harbor improvement projects.

To ensure water conservation, proposed buildings and landscapes at the project sites will be designed with water saving considerations in mind. The water conservation methods which could be considered during the design phase of the proposed projects may include, but are not limited to:

- Installation of water efficient fixtures
- Low-volume flush toilets and urinals
- Automatic faucets for sinks and lavatories
- Appropriate landscape plant selection to limit water uptake
- Irrigation with non-potable or reclaimed water

Wastewater Collection

Cesspools at Kawaihae Harbor will eventually have to be replaced with individual wastewater systems, as the County of Hawaii has no plans to provide sewer service to the harbor area. Newly developed areas will construct individual wastewater treatment systems in accordance with DOH regulations.

The Kawaihae Harbor vicinity is in a critical wastewater disposal area as determined by the Hawaii Wastewater Advisory Committee. No new cesspools will be allowed in this area. Continued use of existing cesspools is covered under provisions of Hawaii Administrative Rules, Chapter 11-62, Wastewater Systems. Harbors Division will develop a sewer master plan for Kawaihae Harbor and analyze the feasibility of a centralized collection, treatment and disposal system that conforms to applicable provisions of Hawaii Administrative Rules, Chapter 11-62, Wastewater Systems.

Fire Protection

All future harbor structures and cargo handling activities must conform to existing fire codes. Additional fire hydrants and sprinkler systems will be installed when warranted at the appropriate project sites. ***At Kawaihae Harbor, Harbors Division will [evaluate the requirement for fire hydrants to be closer together than currently provided and take appropriate action.] ensure that adequate hydrants are provided for the safety of existing and proposed development.*** All on-site fire protection requirements and procedures will be closely coordinated with the Fire Prevention Bureau of the County of Hawaii.

3.13 NOISE

Overview of Noise Exposure. The impacts of sound on the environment are determined by several factors including, sound level (loudness), the duration of exposure to the noise, the

frequencies involved, and the variation or fluctuations in noise levels during exposure. Loudness is measured in units called decibels (dB). Since the human ear is unable to perceive all sound frequencies equally, noise levels are adjusted to correspond to human hearing. This adjusted unit is known as the A-weighted decibel, or dBA.

The noise descriptor currently used by federal agencies to assess environmental noise is the Day-Night Average Sound Level (DNL or Ldn). This descriptor incorporates a 24-hour average of instantaneous dBA levels as read on a standard Sound Level Meter. By definition, the minimum averaging period for the DNL descriptor is 24 hours. Sound levels which occur during the nighttime hours of 10:00 PM and 7:00 AM are increased by 10 dB prior to computing the 24-hour average by the DNL descriptor.

A value of 65 DNL or lower is considered to be an acceptable exterior noise level for residential receptors. This standard is applied nationally including the state of Hawaii. TABLE 12 presents current federal noise standards and acceptability criteria for residential land uses that are present within the general environs of the harbor areas and which may be affected by noise from harbor activities. For industrial/commercial areas such as the two harbors, DNL levels of up to 75 dB are considered "compatible without restrictions" (SDOT, 1999).

TABLE 12
Exterior Noise Exposure Classification
(Residential Land Use)

Noise Exposure Class	Day-Night Sound Level	Equivalent Sound Level	Federal (1) Standard
Minimal Exposure	Not Exceeding 55Ldn	Not Exceeding 55Leq	Unconditionally Acceptable
Moderate Exposure	Above 55 Ldn But not above 65Ldn	Above 55 Ldn But not above 65Leq	Acceptable (2)
Significant Exposure	Above 65 Ldn But not above 75Ldn	Above 55 Leq But not above 65Ldn	Normally Unacceptable
Severe Exposure	Above 75 Ldn	Above 75 Leq	Unacceptable

- Notes: (1) Federal Housing Administration, Veterans Administration, Department of Defense, and Department of Transportation
- (2) Federal Highways Administration (FHWA) uses the Leq instead of the Ldn descriptor. For planning purposes, both are equivalent if: a) heavy trucks do not exceed 10 percent of total traffic flow in vehicles per 24 hours, and b) traffic between 10:00 PM and 7:00 AM does not exceed 15 percent of average daily traffic flow in vehicles per 24 hours. The noise mitigation threshold used by FHWA for residences is 67 Leq.

In general, the overall existing Ldn levels in the vicinity of the two harbors are influenced by surf noise, motor vehicle traffic, harbor vessels and equipment. Noise related to harbor operations includes on-site motor vehicles, fixed mechanical equipment, and ocean vessel activity. The noise generated from harbor operations is for the most part not radiated beyond the harbor property boundaries. The exception to this is noise radiated by boat whistles and horns. In a study of such whistles for Honolulu Harbor, whistles or horns of large cruise ships were measured at 85 dB at a 1,000-[feet] *foot* distance (Ebisu, 1999).

3.13.1 Existing Conditions

Hilo Harbor. Pier 1 at the center of Hilo Harbor is located the following distances from noise receptors (noise-sensitive land uses such as churches, schools and residential areas):

- Approximately 3,000 feet from the nearest noise sensitive land uses to the east (churches and schools in the Keaukaha area).
- Approximately 3,000 feet from the east-facing hotels along Banyan Drive.
- Approximately 2,300 feet from the existing residential leased lots at Baker's Beach.
- Approximately 2,300 feet from residential development along Keaa Street. (However,

- planned development of Piers 4, 5 and 6 will be within 1,000 feet of Keaa Street.)
- Approximately 3,000 feet from Bay Clinic, an outpatient health facility (i.e., providing no overnight care).

The most significant noise contributor in the Hilo Harbor area is Hilo International Airport, which has been the subject of a 2000 noise study by Wilson Okamoto & Associates, Inc., Aries Consultants, Ltd. and Y. Ebisu Associates. According to the 2000 Noise Exposure Map for that study, the ambient noise level in the Hilo Harbor area, including airport noise, was 60-65 Ldn. This measurement is within ranges deemed acceptable for residential development used by the Federal Housing Authority, U.S. Department of Urban Development and Veterans Administration. Therefore it exceeds (is better than) the standards required for commercial and industrial development of 75 Ldn.

Kawaihae Harbor. The harbor is located in a sparsely populated area and the ambient noise level in the project area is generally considered low. On-site observations indicate commercial harbor activities generate noise in relation to the level of harbor activity at a given time. Typical sources of noise are boat traffic and movement of mechanized forklifts, harbor containers and trucks. The harbor is currently a "daylight only" port, so operations that generate noise would most likely not occur during typical quiet hours (10 p.m. to 6 a.m.).

3.13.2 Potential Impacts

Hilo Harbor and Kawaihae Harbor.

Discussion in this section applies to both harbors except where indicated as specifically applicable to Hilo Harbor. Exterior noise levels as high as 75 DNL are generally considered acceptable for commercial, industrial, and other non-noise sensitive land uses. The harbor project areas include proposed land uses and activities which fall within the commercial and industrial categories. These proposed land uses and activities are not considered to be noise sensitive. Further, risk of adverse noise impacts within the proposed project areas is considered to be small.

At Hilo Harbor, residences along Keaa street may experience increased noise because of vehicles entering the proposed Piers 4, 5 and 6 areas. The Bay Clinic may experience the same noise exposure. Other ongoing project-related traffic noise levels will minimally contribute to future traffic noise levels. Under the 2020 Master Plan, Baker's Beach residences will not be impacted because they are planned for demolition after current State of Hawaii leases expire in 2015 and these lands are successfully transferred to Harbors Division from the Department of Land and Natural Resources.

Unavoidable but temporary noise impacts may occur during the construction of the proposed harbor improvement projects. The quality of the acoustic environment may be degraded to unacceptable levels during periods of construction because noise from construction activities are

predicted to be audible at adjoining properties. However, none of these noise impacts will occur within the standard 50 feet from a noise sensitive receptor. Construction related noise will be generated by both on-site equipment, (pumps, generators, compressors, jack hammers, rock drills, demolition equipment, and power tools) and vehicles (i.e. trucks, front loaders, backhoes, tractors, graders, pavers or concrete mixers). Pile driving that could be used in the construction of new piers at project sites is anticipated to generate noise levels ranging from 80 dB at 1,000 ft distance to 90 dB at 250 ft distance without mitigation measures. Indoors, typical pile driving noise levels range from approximately 70 to 80 dB for naturally ventilated structures and 58 to 68 dB for air conditioned structures (Ebisu, 1999).

In addition to noise generated by pile driving activities, pile driving induces ground vibrations which have the potential to cause structural and architectural damage to existing structures. Pile driving ground vibrations are measured in peak particle (or ground) velocity (PPV) in units of inches/second. The criteria most commonly used in measuring structural damage induced by pile driving activities is a 2.0 inches/second limit derived from work by the U.S. Bureau of Mines (Ebisu, 1999). A more conservative limit of 0.2 inches/second is also used, and was suggested for planning purposes on the proposed harbor projects because of the repetitive nature of pile driving activities which can increase the risks of damage to adjacent structures.

The intensity of vibration of pile driving activities can be expressed in units known as scaled energy distance factor (SEDF). The SEDF can be converted to measurable distances between the pile driver tip and a receptor to determine PPV levels. SEDF and PPV levels for pile driving activities vary depending upon substrate type and the size of the pile driver used. When pile driving operations must penetrate through coral layers, vibration levels at a receptor (adjacent structure) may exceed the 0.2 inches/second vibration damage criteria, particularly if the receptor is supported by the common coral layer. Actual PPV levels at the receptor are dependent upon both the distance from the pile driver and the size of the pile driver (Will Chee -- Planning, Inc., 1999).

Future sources of noise include harbor vehicles such as heavy trucks, forklifts, sweepers, buses, and ships which will conduct maintenance activities and transport materials and personnel to and from harbor projects. Mechanical equipment such as emergency electrical generators, air conditioning cooling towers, air-conditioning compressors, exhaust fans, and other ventilation systems will be the primary fixed on-site noise sources expected to be located at the harbor project sites. **At Hilo Harbor, [T]** four buses entering the proposed passenger terminal and Piers 5 and 6 will increase traffic noise when cruise ships arrive and depart. Cruise ship whistles or horns at approximately 85 dB (at 1,000 feet distance) will be audible from residences along Keaa Street and at Bay Clinic.

3.13.3 Proposed Mitigation Measures

Noise from Construction

Future increases in traffic noise levels will not require traffic noise mitigation measures. However, the following mitigation measures should be implemented if determined to be feasible.

- The use of properly muffled construction equipment should be required.
- If possible, heavy equipment and portable diesel engines and generators should be located at least 400 – 500 feet from residences.
- If feasible, the use of pre-drilling techniques, vibratory pile driving equipment, and bored and cast-in-situ piles to reduce the number of blows and impact noise from pile driving operations.
- The adherence to State Department of Health regulations controlling construction noise limits and construction curfew times. Under DOH permit procedures, construction activities are permitted weekdays between the hours of 7:00 a.m. – 6:00 p.m., and on Saturdays between 9:00 a.m. – 6:00 p.m.

Noise from Future Harbor Operations

Noise generated by harbor vehicles and fixed on-site mechanical equipment must comply with existing State DOH vehicular noise limits and property line noise limits (Hawaii Administrative Rules Title 11, Chapters 42 and 46 respectively). If the noise radiated beyond the harbor property boundaries is at or below the residual background ambient noise levels, noise from these sources will be difficult to hear at the closest noise sensitive receptors.

At Hilo Harbor, [S] ships generally leave the harbor between 6pm and 8pm unless there is a hazard in the channel. Boat whistles and horns at Hilo's Piers 1 and 2 will produce noise that is audible at the hotels along Banyan Drive as well as residences along Keaa Street and the Bay Clinic. Horns are intermittent in nature, *and are sounded* prior to sailing for safety drills [and] *or* if a hazard is encountered while entering or leaving the harbor. Harbors Division will request ships using the harbor to refrain from sounding whistles and horns during the hours of 7 a.m. to 5 p.m.

Vibration from Pile Driving

Hilo Harbor. To reduce vibration, the use of pre-drilling techniques, vibratory pile driving equipment, and bored and cast-in-situ piles will reduce the number of blows and impact noise from pile driving operations. *In the event of blasting, appropriate vibration limits to protect structures and minimize annoyance at potentially affected residential areas will be set in contract specifications. The contractor must retain a blasting consultant to provide a plan and initiate blasting work, including the supervision of initial test*

blasting to establish effects and baseline conditions. Vibration must be monitored at sensitive locations at the beginning of the construction. Monitoring may be eliminated if records show a consistent pattern of compliance with specified vibration levels. Harbors Division must inform potentially affected people living and working in the vicinity about the construction method, probable effects, quality control measures and precautions to be used, and the channels of communication available to them.

Kawaihae Harbor. To reduce vibration, the use of pre-drilling techniques, vibratory pile driving equipment, and bored and cast-in-situ piles will reduce the number of blows and impact noise from pile driving operations. Because of the risk of vibrations from pile driving posed to nearby Puukohola Heiau National Historic Site (CHAPTER 4), alternative methods will be evaluated for pier construction, such as drilling. *In the event of blasting, the contractor must retain a blasting consultant to provide a plan and initiate blasting work, including the supervision of initial test blasting to establish effects and baseline conditions. Vibration must be monitored at sensitive locations, such as Puukohola Heiau National Monument, at the beginning of the construction. Monitoring may be eliminated if records show a consistent pattern of compliance with specified vibration levels. Harbors Division must inform potentially affected people living and working in the vicinity about the construction method, probable effects, quality control measures and precautions to be used, and the channels of communication available to them.*

3.14 AIR QUALITY

Ambient air pollution concentrations are regulated by Ambient Air Quality Standards (AAQS) under [f] Federal law (Section 40, Part 50 CFR) and State law (Hawaii Revised Statutes, Chapter 11-59). Some of the State AAQS for CO, NO₂ and O₃ are more stringent than the federal standards. However, they may be exceeded once per year. Another difference between State and [f] Federal AAQS is that the former is given in terms of a single standard while the latter is divided into primary and secondary standards (Will Chee – Planning, Inc., 1999).

The State AAQS are intended to “protect public health and welfare and to prevent the significant deterioration of air quality” (State of Hawaii, 1993). The primary [f]Federal AAQS are intended to protect public health with an adequate margin of safety while secondary standards are intended to protect public welfare through the prevention of damage to soils, water, vegetation, animals, wildlife, man-made materials, visibility climate and economic values (40 CFR, Part 50).

TABLE 13 summarizes both the [f] Federal and State AAQS. Each regulated air pollutant has the potential to adversely impact human health or to produce environmental degradation when present in sufficiently high concentrations for prolonged periods of time. Additionally, the State Air-Pollution Control Regulations prohibit visible emissions at the property line of fugitive dust from concentration activities (State of Hawaii, 1993a).

TABLE 13
Summary of State of Hawaii and Federal
Ambient Air Quality Standards

Pollutant	Sampling Period	National AAQS Primary	National AAQS Secondary	State of Hawaii AAQS
Particulate Matter ^a	Annual	50	50	50
	24 hours	150	50	150
Sulfur Dioxide	Annual	80		80
	24 hours	365	1,300	365
	3 hours	—		1,300
Nitrogen Dioxide	Annual	100	--	70
Carbon Monoxide	8 hour	10	--	5
	1 hour	40	--	10
Ozone	1 hour	235	--	100
Hydrogen Sulfide	1 hour	--	--	35
Lead	Quarterly	1.5	--	1.5

^a All standards represent the maximum allowable concentrations and are expressed in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) except CO in milligrams per cubic meter (mg/m^3)

^b Particles are less than or equal to 10 microns aerodynamic diameter.

3.14.1 Existing Conditions

Hilo Harbor. The air quality of the Hilo area is generally excellent as measured by the the State of Hawaii, Department of Health, Clean Air Branch at its air quality monitoring station. TABLE 14 shows the average 1999 annual data on two measures of air quality:

TABLE 14
Air Quality Measurements at Hilo Harbor

Air Quality Measurement	Standard (no greater than)	1999 Hilo Measurement (Annual Average)
Particulate matter (PM10) or 10 microns or less in diameter	50	11
Sulpher dioxide (SO ₂)	80	2

Source: State of Hawaii, Department of Health, Clean Air Branch, 2000

Kawaihae Harbor. The study area is a generally under-developed area characterized by good air quality, with no sources of industrial air pollution nearby. The greatest source of air pollution is periodic eruptions of Kilauea Volcano. In addition, the coral fill area adjacent to the harbor site is a source of dust, particularly during periods of high wind (U.S. Army Engineer Division, 1994).

The air quality monitoring station closest to Kawaihae Harbor is located about 28 miles from the project site, mauka of Kona International Airport. The "Huehue" station is operated by Hawaii Electric Light Company. Readings of air contaminants taken during March and April 2000 are shown in TABLE 15 below, showing actual air quality significantly beneath (better than) standards.

TABLE 15
Air Quality Measurements Near Kawaihae Harbor

Air Quality Measurement	Standard (no greater than)	1999 Huehue Measurement (Annual Average)
Particulate matter (PM10)	50	24
Sulpher dioxide (SO ₂)	80	13

Source: Hawaii Electric Light Company

3.14.2 Potential Impacts

In the short-term, air quality will be impacted primarily by construction activities at the project sites. Construction vehicular activity will increase automotive pollutant concentrations at the project sites and adjacent streets. Construction activities will generate fugitive dust emissions resulting in an increase of particulate matter (PM₁₀) levels in the project area. Actual emissions can be expected to vary depending on the type of activity conducted on any given day.

Construction at Kawaihae [h]Harbor can be expected to result in fugitive dust because of chronically windy conditions at the harbor.

Heavy construction equipment will also emit air pollutants in the form of engine exhaust. Carbon monoxide emissions from large diesel engines are generally about equal to those from a single automobile, however nitrogen dioxide emissions can be quite high. Fortunately, nitrogen dioxide from other sources in the area should be relatively low, so the overall impact of exhaust pollution from construction equipment should be minor.

3.14.3 Proposed Mitigation Measures

The proposed projects will have short-term construction-related impacts on air quality, including the generation of dust and emissions from construction vehicles, equipment, and commuting workers. In the long-term, increased traffic volumes in the vicinity of the project site will contribute minimally to ambient CO concentration levels.

The State of Hawaii, Department of Health (DOH), Clean Air Branch, regulates emissions from certain types of equipment, such as generators and boilers, under Hawaii Administrative Rules, 11-60.1, Pollution Control. Currently no such equipment is anticipated at the proposed harbor facilities. However, if such equipment is utilized on harbor property in the future, equipment owners and/or operators will have to conform to air quality regulations cited above.

The State of Hawaii, Department of Health (DOH), Clean Air Branch, noted during consultation that DOH has become aware that air quality monitoring is being performed near cruise ships at berth in major cruise destinations such as Alaska. DOH is currently considering implementation of a comparable monitoring program to encompass both air quality standards and the presence of "opacity" or readings of smoke from a ship's smokestack. Any citations for air pollution emissions or opacity will be levied by DOH on cruise ship owners. Harbors Division will cooperate with DOH by providing access to harbor facilities to perform air quality monitoring if such a program is implemented in the future.

Dust Control

During the construction period fugitive dust control measures should be implemented to reduce the amount of particulate matter emissions.

Hilo Harbor. On-site dust control can be accomplished through frequent watering of unpaved roadways and areas of exposed soil. The EPA estimates that twice-daily watering can reduce fugitive dust emissions by as much as 50% (U.S. EPA, 1996b). To further minimize fugitive dust

emissions, the paving and/or landscaping of bare earth areas should be implemented as soon as practicable. The amount of watering will depend on the level of disturbance at Hilo Harbor.

Kawaihae Harbor. According to consultation with DOH, watering at Kawaihae Harbor may have to be done much more frequently than at Hilo because of the arid climate and rapid evaporation rates. At some Kona construction sites, watering has to be done once an hour. However, the frequency of watering at Kawaihae will be relative to the amount of ground disturbance. Because of the texture of the coral fill and frequent high winds, another possible mitigation measure is placing a fugitive dust screen between the highway and the harbor to protect motorists on Kawaihae Road from encountering dust while driving.

CO (Carbon Monoxide) Emissions

The proposed project's impact on air quality in the vicinity of major intersections serving the project area will be minimal and will not threaten or contribute to violations of the national AAQS. This restriction would lower traffic congestion, which in turn, would reduce vehicle emissions and CO concentration levels. Mitigation measures for future CO emissions will not be necessary as *emission levels associated with the proposed action will be minimal*. However, a mitigation measure to reduce vehicle generated CO emissions could be implemented by limiting construction vehicle activity to off-peak hours.

3.15 WATER QUALITY

3.15.1 Methodology

A water quality study was undertaken by AECOS, Inc. in support of this EIS. Review of Water Quality and Biology in Kawaihae Harbor and Hilo Harbor for the Harbors 2020 Master Plan [and] is attached as APPENDIX E. In September 2000 water samples were collected and analyzed by AECOS, Inc. TABLE 16 lists the methods employed to analyze these samples.

TABLE 16
Analytical Methods and Instruments Used for the
September 2000 Sampling in Hilo and Kawaihae Harbors, Island of Hawaii

Analyses List	Method	Reference	Instrument
Ammonia	alkaline phenol	Koroleff in Grasshoff et al. (1986)	Technicon AutoAnalyzer II
Chlorophyll a	Method 10200H	Standard Methods 18th Edition (1992)	Turner Model 112 fluorometer
Dissolved Oxygen	EPA 360.1	EPA (1979)	YSI Model 58 DO meter
Nitrate + Nitrite	EPA 353.2	EPA (1993)	Technicon AutoAnalyzer II
pH	EPA 150.1	EPA (1979)	Orion SA 250 pH meter / Ross combination electrode
Temperature	thermister calibrated to NBS cert. Thermometer (EPA 170.1)	EPA (1979)	YSI Model 58 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 (TSS)	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
Salinity	Bench salinometer	Grasshoff in Grasshoff et al. (1986)	AGE Model 2100

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.

3.15.2 Existing Conditions

Hilo Harbor. Hilo Harbor is classified as a Class B or "wet" embayment by the State Department of Health and is subject to the State's "wet" embayment water quality criteria (TABLE 17). "Wet" criteria apply to embayments when the average fresh water inflow from the land is greater than one percent of the embayment volume per day.

TABLE 17
State of Hawaii "Wet" Water Quality Criteria for Embayments
(HAR §11-54-06)(DOH, 1992)

Parameter	Geometric Mean value not to exceed this value	Value not to be exceeded more than 10% of the time	Value not to be exceeded more than 2% of the time
Total Nitrogen ($\mu\text{g N/l}$)	200	250.0	350.0
Ammonia ($\mu\text{g N/l}$)	6	8.5	15.0
+ Nitrite ($\mu\text{g N/l}$)	8	14.0	25.0
Total Phosphorus ($\mu\text{g P/l}$)	25	40.0	60.0
Chlorophyll a ($\mu\text{g/l}$)	1.50	1.50	3.00
Turbidity (ntu)	1.5	1.0	1.5

Nitrate

Other "standards":

- pH units shall not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, storm drain or groundwater discharge may depress the pH to a minimum level of 7.0.
- Dissolved oxygen shall not decrease below 75% saturation.
- Temperature shall not vary more than 1 C from ambient conditions.
- Salinity shall not vary more than 10% from natural or seasonal changes considering hydrologic input and oceanographic factors.

Source: AECOS, Inc., 2000

Water quality conditions at Hilo Harbor are determined primarily by influxes of surface water runoff from Wailuku River and groundwater. As a result, the harbor has pronounced vertical stratification of salinity/temperature, i.e., there is a well-defined surface layer of low salinity water and a denser, more saline, bottom layer. The flow of fresh basal groundwater to the bay occurs at a nearly constant rate in comparison with surface runoff, which varies with weather conditions. As the influx of freshwater into the harbor increases, there is a corresponding deviation of water quality from optimal conditions, especially in the surface waters. This is particularly evident in increased turbidity (AECOS, Inc., 2000).

Water quality studies of Hilo Harbor taken in 1980 and again in September 2000 resulted in generally the same mean values, except that turbidity in 2000 was somewhat lower and nitrate + nitrite nitrogen

levels were notably higher. Turbidity would be expected to rise with infusions of stormwater. When compared to the mean values in TABLE 15 above, results indicate that the harbor waters are in conformance with salinity, temperature, *dissolved oxygen* (DO) saturation levels and pH. Turbidity, nitrate + nitrite nitrogen, total nitrogen, total phosphorus and chlorophyll typically exceed State criteria, especially in the surface waters. Water quality tends to improve in Hilo Bay away from the shore and the inner harbor (AECOS, Inc., 2000).

Kawaihae Harbor. Kawaihae Harbor is categorized as a Class A embayment by the State Department of Health (HAR §11-54-06; DOH, 1992) and is therefore subject to the State's "dry" embayment water quality criteria (TABLE 18). "Dry" criteria apply to embayments where the average daily fresh water inflow from the land is less than one percent of the embayment volume.

TABLE 18
State of Hawaii "Dry" Water Quality Criteria for Embayments
(HAR §11-54-06)(DOH, 1992).

Parameter	Geometric Mean value not to exceed this value	Value not to be exceeded more than 10% of the time	Value not to be exceeded more than 2% of the time
Total Nitrogen ($\mu\text{g N/l}$)	150.0	250.0	350.0
Ammonia ($\mu\text{g N/l}$)	3.5	8.5	15.0
Nitrate + Nitrite ($\mu\text{g N/l}$)	5.0	14.0	25.0
Total Phosphorus ($\mu\text{g P/l}$)	20.0	40.0	60.0
Chlorophyll a ($\mu\text{g/l}$)	0.50	1.50	3.00
Turbidity (ntu)	0.4	1.0	1.5

Other "standards":

- pH units shall not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, storm drain or groundwater discharge may depress the pH to a minimum level of 7.0.
- Dissolved oxygen shall not decrease below 75% saturation.
- Temperature shall not vary more than 1 C from ambient conditions.
- Salinity shall not vary more than 10% from natural or seasonal changes considering hydrologic input and oceanographic factors.

Vertical stratification in salinity/temperature in Kawaihae Harbor is minimal, indicating that there is relatively little groundwater input to the harbor basin. As a result, water quality conditions inside and outside the harbor are essentially the same. The lack of significant surface water discharge and groundwater inputs along this section of the coast is the primary reason for the generally excellent water quality conditions in this harbor (AECOS, Inc., 2000).

A comparison of water quality conditions at Kawaihae Harbor, as measured in 1991 and again in September 2000, with the State water quality criteria in TABLE 16 above suggests that the harbor is

generally in conformance with all criteria[.] [A] *with the* possible exception [is] of turbidity. The progressive increase in turbidity with depth apparent in March 1991 data suggests that sediment has accumulated in significant amounts on the harbor floor over the years. Periods of turbulence, such as *during* high wind conditions or the movement of large vessels into and out of the harbor, may increase turbidity levels throughout the water column, as noted by the divers on September 16, 2000. Since turbidity levels were well within the State criteria during the September 1999 sampling events, further monitoring would be required to determine whether long-term mean levels exceed[ed] the State criteria.

3.15.3 Potential Impacts

Hilo Harbor. There are ongoing concerns concerning the potential for leakage of petroleum or other toxic liquid bulk materials into the harbor (Section 3.11.2) and petroleum spills.

The primary impact to water quality during the proposed construction activities within the harbor is a likely temporary increase in turbidity in the water column when the bottom area of the harbor is disturbed by dredging and pier construction. Turbidity also occurs [now each time a ship] *during rough ocean conditions and when vessels* enter[s] or leave[s] the harbor. Secondary impacts could include lowering of the DO levels and an increase in nitrogen and phosphorus levels in the disturbed area due to mixing of bottom sediments into the water column.

Construction activities that require dewatering in areas that may contain petroleum hydrocarbons may prompt the need for water treatment prior to release of the water to surface water or groundwater sources.

Kawaihae Harbor. This harbor also has ongoing concerns concerning possible leakage of petroleum or other toxic liquid bulk materials into the harbor (Section 3.11.2) as well as petroleum spills. These concerns will heighten with construction of a larger new liquid bulk terminal. However, a new terminal will have to be constructed under stricter protective guidelines.

The primary water and secondary water quality impacts to be expected from harbor-related construction activities in Kawaihae Harbor will be similar to those described above for Hilo Harbor. Since Kawaihae Harbor has significant coral deposits, turbidity during dredging and pier construction could potentially harm remaining coral communities within Kawaihae Harbor (Section 3.8 MARINE BIOLOGY).

Construction activities that require dewatering in areas that may contain petroleum hydrocarbons may prompt the need for water treatment prior to release of the water to surface water or groundwater sources.

3.15.4 Proposed Mitigation Measures

Harbors Division will continue to support the work and provide space for the equipment of the Clean Island Councils at both harbors. The Clean Islands Council[s] at each subject harbor are responsible for responding to any toxic spill within harbor waters. Response equipment is stored at each harbor and trained personnel are available to deploy the emergency measures.

Water quality can be protected from dredging and pier construction through several safeguards at both harbors.

- **Background Water Quality Analysis.** To reduce potential impacts from construction, a background water quality analysis should be conducted in each harbor before construction. Throughout the construction period, daily monitoring should continue to measure any degradation (AECOS, Inc., 2000).
- **Siltation Curtains.** Siltation curtains made of flexible fabric will create a barrier between the construction area and the harbor area and thereby reduce turbidity. This will reduce disturbance during construction and minimize potential impacts on the surrounding marine environment.
- **Siltation Basins.** During construction, siltation basins will capture muddy water and only allow clear water to be discharged into the harbors.

Hilo Harbor. Because Hilo Harbor is the receiving basin for runoff from the Wailuku River, it is likely that major sediment deposits have accrued over the years in the vicinity of proposed pier construction areas. Thus, greater perturbations in turbidity and nutrient levels in the water column might be expected, necessitating greater care and caution in the deployment and maintenance of siltation curtains around construction activities (AECOS, Inc., 2000).

Kawaihae Harbor. At Kawaihae Harbor, if silt escapes from the first siltation curtain, a second curtain should be erected to further protect undredged coral communities along the inner harbor breakwater from harm due to turbidity (AECOS, Inc., 2000). During construction, siltation basins should be installed to protect the harbor waters from construction-related sediments entering the harbor area through runoff. Since turbidity levels were well within the State criteria during September 1999 sampling events, further monitoring will be required to determine whether long-term mean levels exceeded the State criteria.

Another mitigation measure to protect undredged coral within Kawaihae Harbor will be to plan construction for periods in which coral is not reproducing (spawning). This is generally in the summer months, particularly June and July. Coral species are very predictable in terms of their timing for spawning, so determining the approximate timing should not be difficult (Personal Communication, David Gulko, DLNR Division of Aquatic Resources, 2001).

CHAPTER 4
SOCIAL ENVIRONMENT:
EXISTING CONDITIONS, POTENTIAL IMPACTS
AND PROPOSED MITIGATION MEASURES

4.1 POPULATION

4.1.1 Existing Conditions

Regional Population. Hilo Harbor is located in the South Hilo district and Kawaihae is located in South Kohala district of the County (Island) of Hawaii. Historical population growth statistics for these districts are discussed below and presented in TABLE 19.

- South Hilo population remained constant at approximately one-third of the County of Hawaii population.
- In contrast, the population of the South Kohala district nearly doubled from 1980-1995, although it still represented only 12% of the total island population in 1995.
- The growing community of Waimea and resort development along the Kohala Coast resorts account for most of the growth in the South Kohala district.
- The population of Kawaihae has remained relatively stable in comparison (R.M. Towill Corporation, 2000).

TABLE 19
Population Growth
County of Hawaii Districts

District	1995 Population	% of Total County of Hawaii	% Population Growth in District 1980 to 1990
South Hilo District (location of Hilo Harbor)	45,790	33.3%	5.6%
South Kohala District (location of Kawaihae Harbor)	12,098	8.8%	98.4%
County of Hawaii	137,391	100%	14.1%

Source: State of Hawaii Data Book, 1999, State of Hawaii, Department of Business, Economic Development and Tourism

The population growth for the Island of Hawaii is projected to be approximately 20 percent over the period 2000 to 2025. The population is expected to be evenly divided between east Hawaii, including Hilo, and west Hawaii, including Kawaihae (Harris, 1994). The expected population growth will increase the demand for imported goods arriving through both of the island's commercial harbors.

Hilo Harbor. As an industrial and commercial area, Hilo Harbor currently has no on-site resident population. However, residential dwellings are adjacent to Hilo Harbor on what is known as Baker's Beach.

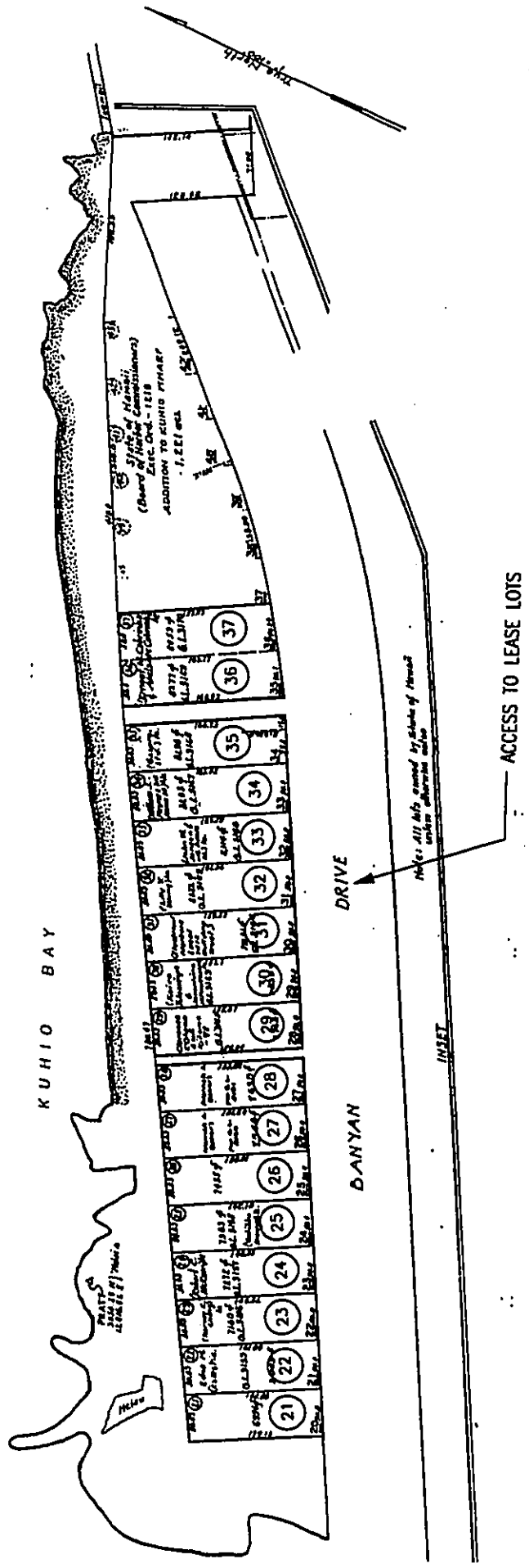
Illegal temporary shelters formerly located on the undeveloped shore of Radio Bay have been removed as of January 7, 2001. These shelters were noted in site visits for consultant studies performed during September and October 2000 (Haun & Associates, 2000; AECOS, Inc., 2000; Char & Associates, 2000).

Baker's Beach Residences

The shoreline west of the harbor facilities is State of Hawaii land known as Baker's Beach (FIGURE [18] 29) which is currently under the jurisdiction of the State of Hawaii, Department of Land and Natural Resources. This area (located in TMK (3) 2-1-07) contains 17 houselots on leased land. TABLE 2C shows the TMK parcel numbers and associated acreage. These parcels contain mostly beach cottage structures. All leases terminate in 2015. The beach homes currently are the home to a total of approximately 30-40 individuals (Personal Communication, Harbormaster, 2000).

Baker's Beach was formed with dredging spoils resulting from: (a) harbor dredging that occurred between 1925 and 1930 and (b) reduced wave energy caused by the new breakwater. Today, there is very little sand present. According to a resident of the area, a man in his 80s, the 1946 tsunami removed much of the sand (Haun & Associates, 2000). FIGURE [19] 30 shows the past changes in the shoreline of Baker's Beach.

Kawaihae Harbor. There is no resident population within or adjacent to the industrial and commercial harbor area.



LEGEND:
 (21) PARCEL NUMBER
 [] BAKER'S BEACH LEASE LOTS

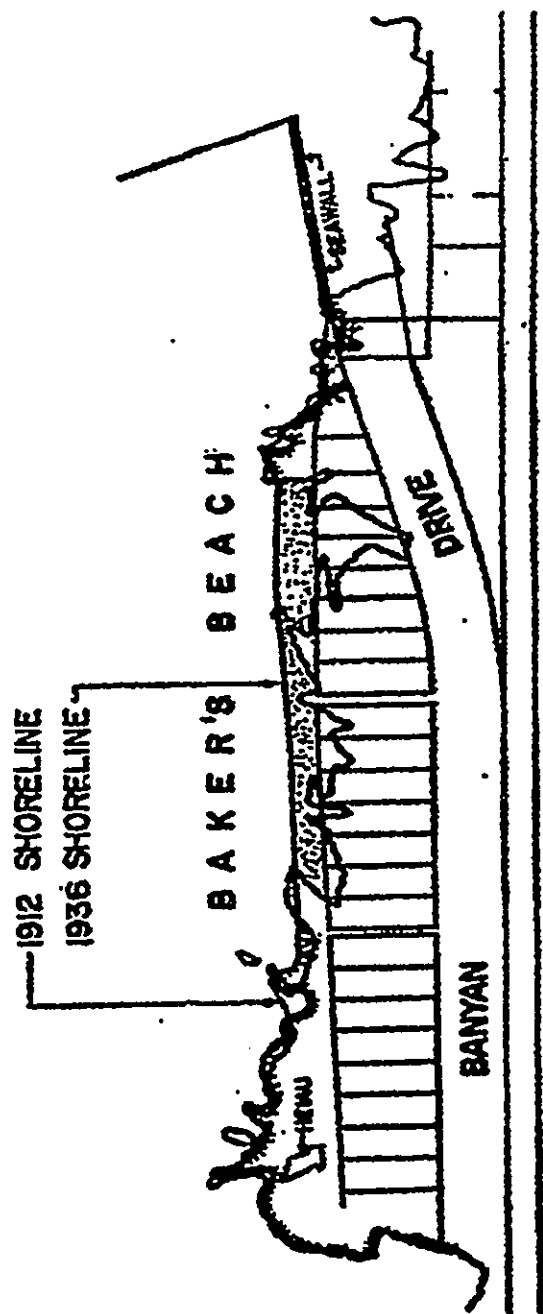
Figure [18] 29
 Baker's Beach Detail, TMK (3) 2-1-07
 HILO HARBOR VICINITY
 Source: County of Hawaii

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TABLE 20
Baker's Beach Leased Residential Lots
TMK (3) 2-1-07

Parcel Number	Area (in Square Feet)
21	6996
22	7089
23	7180
24	7272
25	7363
26	7455
27	7546
28	7638
29	7748
30	7839
31	7931
32	8022
33	8114
34	8205
35	8296
36	8277
37	8053



HILO BAY PART 2: FROM
 SEASON ENVIRONMENTAL STUDY
 BAKER'S BEACH SHORELINE CHANGE
 FIGURE 25-2



SOURCE: 1936 SHORELINE TAKEN FROM HAWAII TERRITORY SURVEY
 BY L.M. WHITEHOUSE-NAVIGATOR DATED JANU 1936
 AND SHORELINE TAKEN FROM HAWAII TERRITORY SURVEY
 BY WALTER E. WALL-NAVIGATOR DATED 1912

Figure [19] 30
 Baker's Beach Shoreline Changes
 (from Kelly et al 1981)
 HILO HARBOR VICINITY
 Source: Haun & Associates, 2000

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4.1.2 Potential Impacts

Hilo Harbor. Proposed construction of new Piers 4, 5 and 6, cruise ship passenger terminal and Ocean Research Facility in the western area of the harbor will require demolition of the houses on Baker's Beach. However, in the 2020 Master Plan construction is planned to occur after the termination of existing land leases in 2015. This precludes the need for relocation.

Kawaihae Harbor. No impacts are expected from proposed development under the 2020 Master Plan, as there is no resident population in the commercial harbor area.

4.1.3 Proposed Mitigation Measures

This report assumes that eviction proceedings in the Radio Bay area will result in no population in that area. In the western area designated for proposed Piers 5 and 6, construction of improvements is scheduled for after the termination of the lease of the residential lots on Baker's Beach.

4.2 ECONOMICS AND EMPLOYMENT

Economic Impact of Harbor Development. As presented in CHAPTER 2, the economic viability and growth potential of Hawaii is closely tied to its essential infrastructure, including harbors. In 1992, the major harbor industries of Hawaii produced \$1.934 billion in direct sales. That year, Hawaii's Gross State Product amounted to \$33 billion. Fully a third, or \$10.3 billion, of that amount in the form of goods and services passed through the State's commercial harbors. Harbor industries employed 8,298 people in Hawaii in 1992 (McDonald and Deese, 1994; Lee and Olive, 1994, adjusted by SMS Research for major commercial harbor industries).

The economic importance of harbor development and improvement can be illustrated by describing potential adverse impacts of imposing restraints upon such activities. Findings from an input/output model developed for Harbors Division suggest that the negative impacts of curtailed harbor industry growth are potentially substantial. The study found that limiting harbor development and improvements by just 1% per year less than the estimated 2% annual increase in the real value of the Gross State Product through the year 2020 would result in the following adverse impacts:

- Sales and employment of the major harbor industries would realize only 76.6 percent of their potential;
- Hawaii's Gross State Product would be 2.1% lower; and
- Estimated statewide employment would be reduced by 0.5%.

4.2.1 Existing Conditions

Hilo Harbor. Hilo Harbor and its tenants account for direct employment of approximately 77 persons, including Harbors Division employees and those of Matson, Young Brothers, U.S. Coast Guard, HT&T (stevedores) and CSX (formerly SeaLand) (Personal communication, Harbormaster,

2000). This harbor makes possible the growing and lucrative passenger cruise ship market that is becoming an ever-increasing economic force in Hilo.

Kawaihae Harbor. The harbor provides direct employment for approximately 26 persons, including the Harbors Division employees and those of Unocal, Hawaiian Cement, Akana Petroleum and Young Brothers. This harbor is economically important because it is the gateway for the importation of goods for the entire region of west Hawaii which contains the growing Kona metropolitan area, Waimea and the resorts of the Kohala Coast.

4.2.2 Potential Impacts

Overall, constraints on harbor development that limit annual statewide harbor industry growth to 1 percent would impact the State's economy by a combined loss of \$11.7 billion through 2020 (SDOT, 1997). Because of the economic impact of constraining harbor development, economic impacts of the proposed development Hilo Harbor and Kawaihae Harbor improvements will be favorable.

- In the short term, construction expenditures will have an overall beneficial impact on the local construction industry, and construction activities will benefit the community indirectly through the creation of jobs.
- In the long term, expanded harbor operations will stimulate direct maritime expenditures, create port-related jobs, and develop new businesses. Harbor operations will require support businesses to supply ships, handle cargo, and provide other services.
- Implementation of the proposed projects and resultant harbor expansion will stimulate harbor-related business enterprises and increase local employment. The combined increased business activities in the commercial shipping, fishing and tourism industries will result in increased state tax revenues, in the form of excise, individual, and corporate taxes.
- The tourism industry should also experience beneficial economic impacts as a result of the proposed projects as a result of the new and expanded facilities. Turning away of cruise ships because of lack of berthing space will be avoided by increasing the available infrastructure.

The proposed harbor development would provide essential infrastructure that will allow the Island of Hawaii to continue its economic growth. In addition, harbor improvements are likely to generate additional employment due to increases in:

- Port calls by cruise ships, increasing demand for tourism-related business;
- Cargo handling activity; and
- Capacity to ship agricultural products from the growing diversified agriculture business on the Island of Hawaii, particularly forest products.

4.2.3 Proposed Mitigation Measures

Since all potential impacts appear to be beneficial, no mitigation measures in the area of economics and employment will be necessary.

4.3 ARCHAEOLOGICAL AND HISTORIC RESOURCES

4.3.1 Existing Conditions

Hilo Harbor. The following information is drawn from the Haun & Associates archaeological survey of Hilo Harbor. A search of DLNR-HPD, the archaeological report database, and other sources identified 16 archaeological studies of the ahupua'a of Waiakea that covered approximately 1,400 acres between sea level and 1,500-foot elevation (FIGURE [20] 31). None of the previous studies included the Hilo Harbor project area. The only traditional Hawaiian sites identified by the studies are a heiau next to the West Project Area (Kam, 1983) (FIGURE [21] 32), the Puna Trail and five ahu reported by Hammatt. The absence of traditional sites is attributed to the massive ground disturbance of sugar cane cultivation and commercial and residential development of the Hilo area.

In 1974, the Hilo Harbor Breakwater, adjacent to the East Project Area, was documented during the *Statewide Inventory of Historic Places* by DLNR and was assigned State Inventory of Historic Places (SIHP) number 10-35-7441. Kam (1983) reported the identification of a heiau by Cox. The site appears on tax maps near the western boundary of the West Project Area, but was otherwise undocumented.

McEldowney (1979) lists 53 traditional Hawaiian sites for Waiakea and 31 historic sites, primarily buildings. Most of the traditional sites were located by Hudson (1932) and Kikuchi (1973). The remaining six sites were identified during the Statewide Inventory. Nearly all were situated along the coast. The sites include 17 fishponds, seven burials, six platforms, five enclosures, three heiau including one previously identified by Stokes, three house foundations, three trail segments, two shrines, several miscellaneous features, and two complexes of platforms, enclosures, and terraces.

October 2000 Archaeological Survey of Hilo Harbor

The absence of traditional sites within the project areas probably results from the extensive disturbance caused by construction activities associated with the breakwater and port facilities.

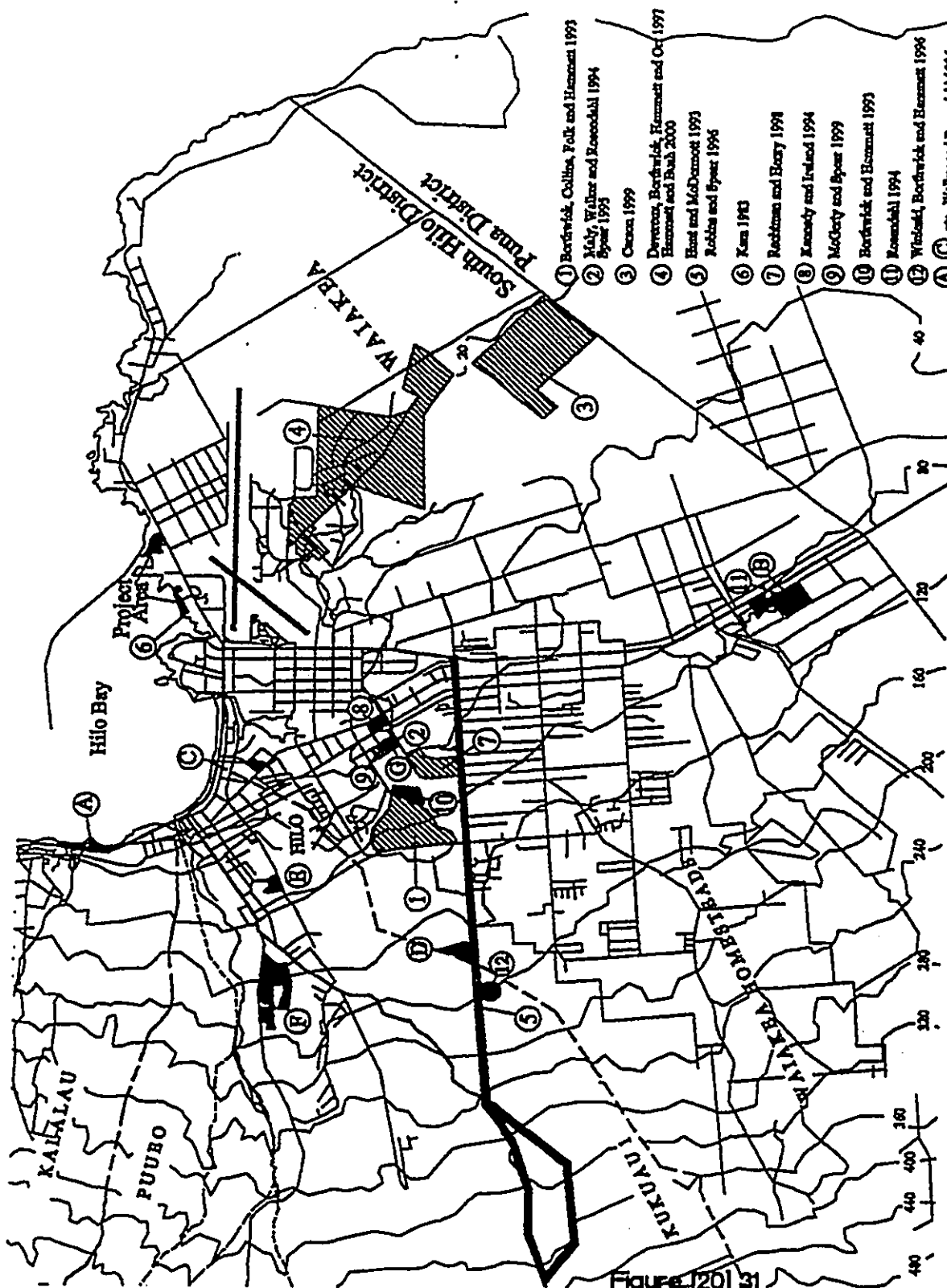


Figure [20] 31
 Previous Archaeological Work (Studies)
HILO AREA
 Source: Haun & Associates, 2000

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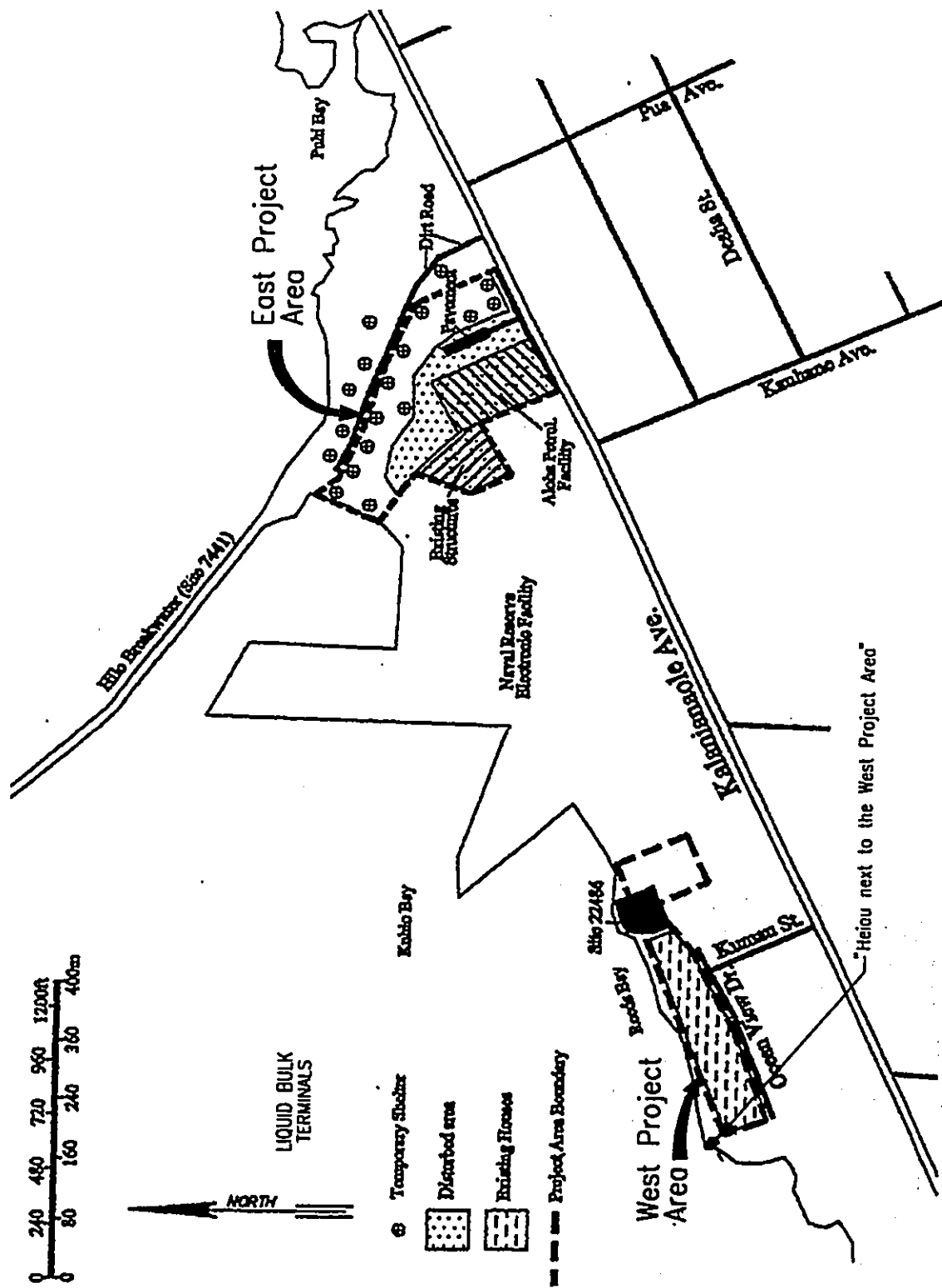


Figure [21] 32
 2000 Archeological Study Locations
 "East Project Area" and
 "West Project Area"
 Source: Haun & Associates, 2000

Not to Scale
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and with the construction of residences within the Baker's Beach Lease Lots along the shoreline in the West Project Area. The presence of a possible heiau near the West Project Area conforms to expectations for traditional site types in the vicinity of the project area. No surface evidence of subsurface cultural deposits was identified and it is unlikely that such deposits would be present because there is very little soil over the lava bedrock in the area and because the area has been extensively disturbed by construction activity and periodic tsunami inundation (Haun & Associates, 2000).

Site 22486

These structural remains probably represent port-related facilities because the curb-lined road at the site extends to the east toward the developed portions of the port. The site consists of four concrete features: two concrete slabs, a set of parallel concrete curbs and two displaced sections of concrete slab located at the water's edge. These features are in fair condition and are altered (Haun & Associates, 2000). For more details and a site map, see APPENDIX H.

Sites identified and relocated from past studies during the survey are assessed for significance based on the criteria outlined in the *Rules Governing Procedures for Historic Preservation Review* (DLNR 1998: Chapter 275). According to these rules, a site must possess integrity of location, design, setting, materials, workmanship, feeling, and association and shall meet one or more significance criteria. Site 22846 was assessed as solely significant under Criterion "d:" "Have yielded, or is likely to yield, information important for research on prehistory or history." The site has yielded information important for understanding historic land use in project area (Haun & Associates, 2000).

Pursuant to DLNR (1998) Chapter 275-6 (d), the initial significance assessments provided by Haun & Associates are not final until concurrence from the DLNR State Historic Preservation Division has been obtained. Such concurrence was requested [via letter to SHPD (Appendix A).] **and was granted by SHPD on January 30, 2001 (APPENDIX A-1, EISPN Comment Letters and Responses).**

Underwater Rock Pile in Radio Bay

The marine biologist conducting the biological investigation at Hilo Harbor encountered what appeared [to him] to be an underwater rock "wall" in Radio Bay that he conjectured "may mark the location of a former fishpond" (AECOS, Inc., 2000). A subsequent dive by archaeologists in Radio Bay to observe this underwater area revealed that the rocks in question were merely construction rubble (Haun & Associates, 2000).

Kawaihae Harbor. Archaeological information for Kawaihae Harbor was drawn from a comprehensive assessment of the Kawaihae region prepared by Cultural Surveys Hawaii in 1991. This study drew on many other previous archaeological and historic assessments of the area. It also included oral histories taken from Kawaihae residents regarding the harbor area.

The two ahupua'a of Kawaihae, known as 1 and 2, have been the focus of numerous archaeological surveys (Kelly, 1974; Kelly and Nakamura, 1981; Barrere, 1983; Clarke, 1983; Clarke, 1986 and Cultural Surveys Hawaii, 1991). Kawaihae Harbor is located in the lowland area of Kawaihae 2, known as "Hikina."

Kawaihae Harbor site is primarily a coral stockpile formed from dredge tailings after the current harbor was created on the site of a coral reef in the 1960s. An archaeological reconnaissance of the Kawaihae region showed no historic or archaeological sites within the harbor boundaries (Cultural Surveys Hawaii, 1991).

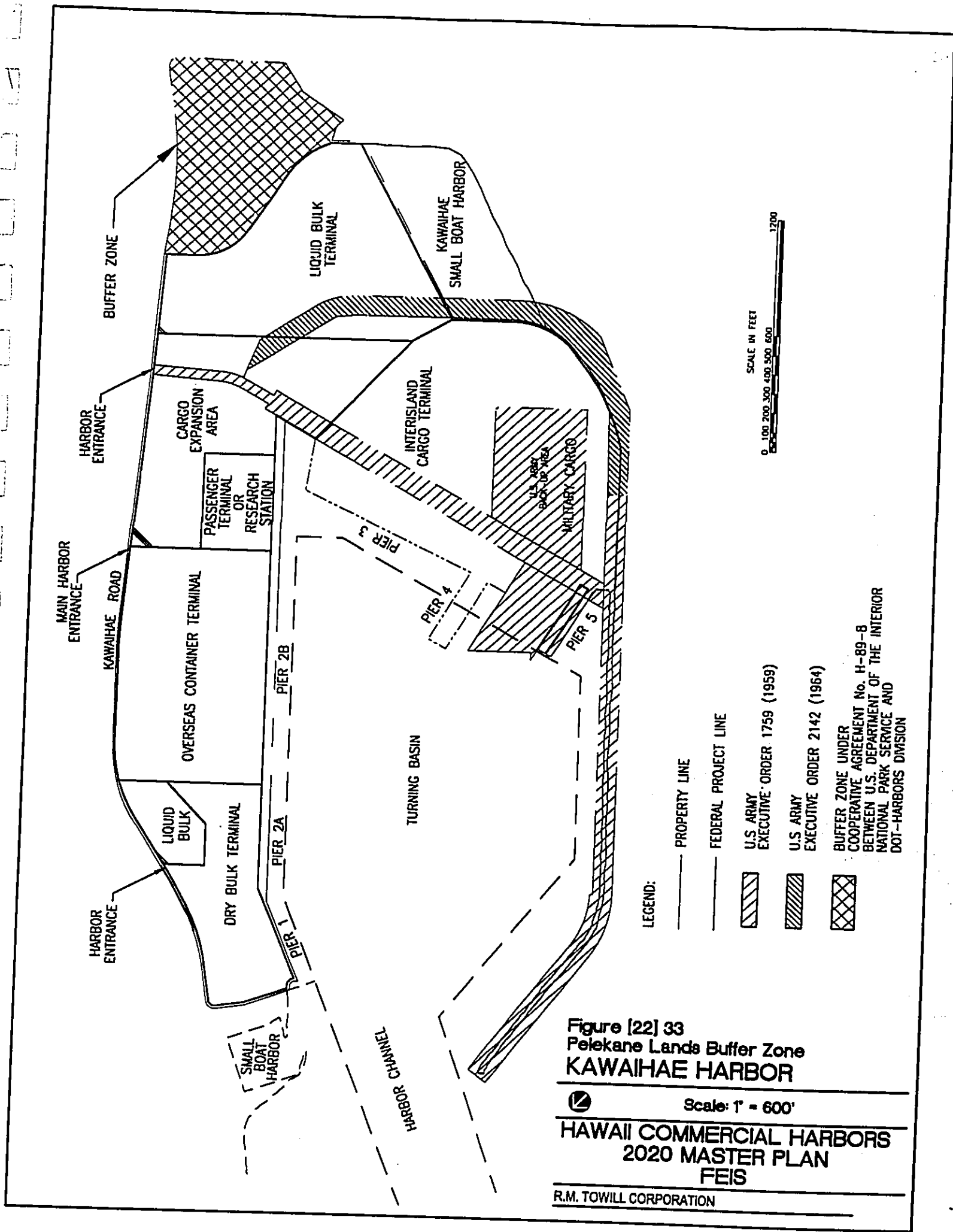
Kawaihae Harbor is near some very significant archaeological sites. Approximately 0.8 miles to the southeast from the harbor is the Puukohola Heiau National Historic Site. The submerged Hale o Kapuni ("Shark") heiau is located south of the harbor property. The submerged heiau has been somewhat covered over by sedimentation (Cultural Surveys Hawaii, 1991; Personal Communication, John Keola Lake, 2001).

Cooperative Agreement No. H-98-8, currently in force between the United States Department of the Interior, National Park Service and the Harbors Division, provides that the so-called Pelekane lands are to be used as a state-owned "buffer zone" that separates the archaeologically significant Puukohola Heiau National Historic Site from the commercial harbor area (FIGURE [22] 33). As stated in the Hawaii Commercial Harbors 2020 Master Plan, the Harbors Division intends to preserve all lands as provided by the above referenced agreement as a buffer zone.

4.3.2 Potential Impacts

Hilo Harbor. The proposed construction of an interisland terminal will require destruction of Site 22486.

No visitation or ritual use of the unconfirmed heiau site west of the harbor was observed during the archaeological survey (Haun & Associates, 2000). However, access to this site could be increased by proposed development in the Baker's Beach area (Piers 4, 5 and 6 and Ocean Research facility).



The planned construction of piers and associated dredging at the harbor will require drilling and possibly controlled blasting.

Kawaihae Harbor. The planned construction of piers and associated dredging at the harbor will require drilling and possibly controlled blasting. These activities would result in noise and vibration that could affect the rock walls of nearby Puukohola Heiau National Historic Site (see Section 3.13, NOISE).

4.3.3 Proposed Mitigation Measures

Hilo Harbor. Since no significant archaeological sites were found, no mitigation measures are recommended (Haun & Associates, 2000). Concurrence with the State Historic Preservation Office will have to be obtained before this recommendation can be implemented. The mapping, written descriptions, and photography at Site 22486 adequately document it and no further work or preservation is recommended.

Technologies that would be considered as an alternative to blasting at Hilo Harbor during the dredging process are the use of cutterheads, drag line operations or roadcutters, to dredge designated areas. Other alternatives to blasting, such as technology using pre-drilling and expansion gels to split rock, will also be evaluated.

Kawaihae Harbor. Under the 2020 Master Plan, Harbors Division will retain the current buffer zone between the Puukohola Heiau National Historic Site and Kawaihae Harbor.

Risk of vibrations from pile driving and/or blasting posed to nearby Puukohola Heiau National Historic Site (CHAPTER 4) will be evaluated during the design phase. If the risk is determined to be prohibitive, alternative methods will be considered for dredging and pier construction. [, such as drilling.] ***Technologies that would be considered as an alternative to blasting at Kawaihae Harbor during the dredging process are the use of cutterheads, drag line operations or roadcutters, to dredge designated areas. Other alternatives to blasting, such as technology using pre-drilling and expansion gels to split rock, will also be evaluated.***

4.4 TRADITIONAL CULTURAL PRACTICES

4.4.1 Existing Conditions

Hilo Harbor.

Cultural History

Hilo Harbor is located in the ahupua'a of Waiakea in the district of South Hilo. Prehistoric use of the Hilo Harbor site likely included habitation, fishing and collecting of marine resources, burial and ritual. However, the construction activity associated with the breakwater and harbor facilities in the early 1900s probably destroyed most sites in the project area (Haun & Associates, 2000).

The current harbor location was away from traditional population centers in Hilo. A review of the Land Commission Awards in the mid-1800s showed the focus of community life was on the Waiakea Pond and Wailoa River, not in the current harbor area. The EIS archaeologist, Alan Haun, Ph.D, concluded there was probably scattered habitation along the coast in the area of the present harbor which probably contained a few fishponds and burial sites, all of which would have been destroyed with harbor construction during the early 1900s. Further, the October 2000 archaeological survey of Hilo Harbor showed no evidence of visitation to or continued use of the unconfirmed "heiau" located near the project site (Personal Communication, Alan Haun, Ph.D, 2000).

Oral Histories Regarding Traditional Cultural Practices

The following description of cultural practices within the harbor area over the last half century in the Hilo Harbor area is based on a December 2000 informant interviews with: 1) Mr. John Moses, who is a Native Hawaiian, life-long Hilo resident and 44-year employee of the Harbors Division, based at Hilo Harbor and 2) Mr. Ian Birnie, the current Hilo Harbormaster. These were some of their observations regarding historic usage of the harbor:

- Recreational fishing has occurred in the harbor for as long as Mr. Moses can recall.
- Per the Harbormaster, an additional structure existed between the harbor and residences on Baker's Beach that was used as a military officers' club during World War II. It was later converted to living quarters for the Hilo Harbormaster. Mr. Birnie believes that Site 22846 (see section 4.3.1) is the foundation of that structure, where as a young man he visited the former Harbormaster who was a family friend.
- All houses along Baker's Beach were standing before and after the 1960 tsunami, according to Mr. Moses. He also said that the large house now used by Hawaiian Electric Light Company (HELCO) as a meeting hall for its employees used to be our informant's residence. HELCO had

planned to move the structure to the beach but the force of the tsunami actually moved it to the waterfront.

Mr. Moses' oral history account is found in APPENDIX I.

Mr. John Keola Lake is a native Hawaiian whose oral history with regard to the Kawaihae ahupua'a is presented below in this section. Mr. Lake offered the following information from his knowledge of traditional cultural practices in Hilo:

- Hilo had the ideal characteristics for a typical early Hawaiian settlement because it was flat, had abundant rainfall and a calm harbor (Hilo Bay).
- Mr. Lake corroborated the facts that population and commerce were centered around the mouth of the Wailoa River and Waiakea Pond, and not the current harbor site, because navigation was possible from the ocean. He also said that the only traditional cultural practice associated with the coastline where Hilo Harbor is now located was fishing.
- The nearby "Ice Pond," where cold fresh water pours in to the bay through an underwater spring, has long been a point of interest in Hilo.
- Mokuola, now called Coconut Island and located one mile from the current harbor, was a traditional "birthing place" for Hawaiian women.
- Pertaining to traditional land uses in the harbor area, nearby Keaukaha was known for orchards. South of Waiakea Pond were taro patches. In Panaewa, where Hilo International Airport is now located, there was another orchard with coconut trees and lauhala.

Mr. Lake's oral history account is found in APPENDIX J.

Kawaihae Harbor.

Cultural History

The first traditional account of Kawaihae was in the context of a disastrous raid by a Maui chief. The account indicated a large population in the uplands and a small population of "lower Kawaihae" near the shoreline. Several accounts indicated that the populace of the coastal area often left for significant periods of time to farm in the Waimea area (Cultural Surveys Hawaii, 1991).

The most significant archeological resource of the *ahupua'a* Kawaihae 2 near the shoreline, and directly above Kawaihae Harbor, is the sacred heiau Puukohola, which is a registered National Historic Site. This heiau was reconstructed by Kamehameha circa 1791. Near the heiau were several royal and alii residences which has prompted archaeologists to state, "Kawaihae has been well known as the residence of kings" (Cultural Surveys Hawaii, 1991).

In the early historic period, Kawaihae's shoreline was, as it is today, the best anchorage in west Hawaii. As a result, there are many early reports of settlements there. The few native huts scattered along the shore were repeatedly destroyed by enemies. The most well-constructed buildings housed the canoes. Post-Contact, the shoreline of Kawaihae became a center for shipment of cattle and vegetables from Waimea. Interisland steamship traffic resulted in commercial development of warehouse and loading facilities as well as animal enclosures (Cultural Surveys Hawaii, 1991).

Oral Histories regarding Traditional Cultural Practices

Extensive oral histories with long-term Kawaihae residents were taken in preparation of the 1991 archaeological study of the Kawaihae area cited by Cultural Surveys Hawaii. Informants and their ages in 1991 included Mr. William Akau, age 62; Mr. Masaru Doi, age 73; and Mr. Eddie La'au, Jr. In November 2000, two Native Hawaiians from the Island of Hawaii who were consulted for names of informants in the Kawaihae area also suggested speaking to Mr. Akau and Mr. La'au. This reinforces the continuing relevance of oral histories they provided in the past.

Interviews relating to traditional cultural practices in the harbor area indicated that dredging and construction of the harbor in the 1960s eliminated most of the practices that existed previously. Relevant highlights of the oral histories include:

- Several families had fishponds that were eliminated by construction of the harbor.
- Where mullet fishing used to occur in the nearby "Shark" heiau, sedimentation from storm runoff had resulted in reduced fish stocks.
- Fishing was seasonal with less activity in the winter months. "All three informants emphasized how good the fishing used to be before the present harbor was dredged. While a variety of fishing activity went on, akule fishing, aku fishing and bait nehu catching were emphasized...The fishing brought many non-Hawaiians to live and work at Kawaihae."
- The tsunami of 1946 wiped out all commercial fishing activity because the fishponds in the Kawaihae area filled with debris. Stated one informant, "It was the beginning of the end for the Kawaihae fishing village. People left."
- The interviewer observed that "Curiously, the construction of a massive deep draft harbor was a source of little comment. It did cause the condemnation of homesteads around the fishpond." (Cultural Surveys Hawaii, 1991)

An additional oral history account of the Kawaihae ahupua'a was taken in January 2001 from Mr. John Keola Lake. Mr. Lake is the Kahuna Nui (high priest) for Puukohola Heiau in Kawaihae. During consultation with National Park Service, Mr. Daniel Kawaiaea, Superintendent of the Puukohola Heiau National Historic Site, referred R.M. Towill Corporation to Mr. Lake as a key informant for traditional cultural practices on the Island of Hawaii, particularly Kawaihae.

Mr. Lake, a teacher of Hawaiian oral tradition and chanting for 38 years, conducted intensive research of the Kawaihae area prior to becoming Kahuna Nui. He provided the following information relative to traditional cultural practices in the Kawaihae ahupua'a:

- Puukohola Heiau is the equivalent of the "State temple of the Hawaiians."
- Post-contact, the area around Kawaihae Harbor was named the Pelekane lands, referring to the British sailors who came into the developing port.
- Pre-contact, Kawaihae Bay was a peaceful harbor for the alii. Activities focused on the sea, such as gathering of limu in brackish water where streams flowed into the ocean. The limu was used to feed the fish in fishponds along the shore. Along the shoreward side of the reef, Hawaiians would gather crabs, squid and shallow-water fish. On the seaward side of the reef they would go deep sea diving.
- The brackish water enabled growing of mahaloa which was used for weaving fine mats and hats.
- Recreational activities included swimming, deep sea fishing, shoreline fishing and canoeing. Along the coast, the best diving spot was at Hapuna.
- Kawaihae Harbor was a bustling harbor area where cattle were brought from ranches in Waimea for transport to Honolulu. Cattle were driven down what is now Kawaihae Road as recently as the 1940s.

4.4.2 Potential Impacts

With the exception of fishing, traditional cultural practices are not in evidence at either harbor because neither location was a significant historical habitation site, and *because of* the high degree of disturbance from natural forces (tsunami) and harbor construction. Oral histories corroborate this. Further, recreational practices are not planned to be curtailed from current levels at either harbor under the 2020 Master Plan (see Section 4.6, RECREATIONAL RESOURCES).

4.4.3 Proposed Mitigation Measures

As there are no significant impacts to traditional cultural practices, no mitigation measures are recommended.

4.5 SCENIC RESOURCES

4.5.1 Existing Conditions

Hilo Harbor. Scenic areas of Hilo Bay include Mauna Loa and Mauna Kea, the graceful arch of the nearly two-mile harbor breakwater, the small boat area in Reed's Bay, and Coconut Island fronting the hotels on nearby Banyan Drive. Views toward the harbor and Hilo Bay are enjoyed by the hotels on the east side of Banyan Drive and from a distance from the north coast of the bay (FIGURE [23] 34).



Figure [23] 34
View Planes and Scenic Vistas
HILO HARBOR VICINITY
Source: R. M. Towill Corporation



Not to Scale

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Kawaihae Harbor. The harbor is visible below the prominent hilltop where Puukohola Heiau National Historic Site is located and from along Kawaihae Road (FIGURE [24] 35).

4.5.2 Potential Impacts

Hilo Harbor. The construction of proposed Piers 5 and 6 will alter the shoreline of Hilo Harbor. These piers will be used by cruise ships using the proposed passenger terminal. The vista from the hotels on Banyan Drive and from the Alaealea Point area (FIGURE [22] 33) will include the new piers. However, hotel guests frequently remark positively about the attractiveness and festive atmosphere that the docking of cruise ships presents (Personal Communication, Harbormaster, 2001).

Kawaihae Harbor. Alteration of the shoreline through construction of proposed Piers 3, 4 and 5 and a liquid bulk terminal will affect the coastal vista from Puukohala Heiau National Historic Site, approximately one mile from Kawaihae Harbor. Sheds for the new interisland terminal and storage tanks for the proposed liquid bulk terminal would be visible from mauka areas and from the Puukohola *Heiau* National Historic Site. Construction of piers will make the shoreline more regular but not significantly alter the landscape. The light-colored coral stockpile area already visible will be replaced by asphalt pavement. A regular pier edge will replace the existing jagged-edged coral stockpile.

Since Kawaihae Road is on the same elevation as the harbor, improvements will be visible from Kawaihae Road to the extent that they are elevated above the ground, e.g. liquid bulk storage tanks.

4.5.3 Proposed Mitigation Measures

Hilo Harbor. There are no mitigation measures that would completely alleviate the visual impacts from the east-facing Banyan Drive hotels resulting from the construction of additional piers. However, watching the activity of the harbor and the comings and goings of cruise ships is popular with hotel guests.

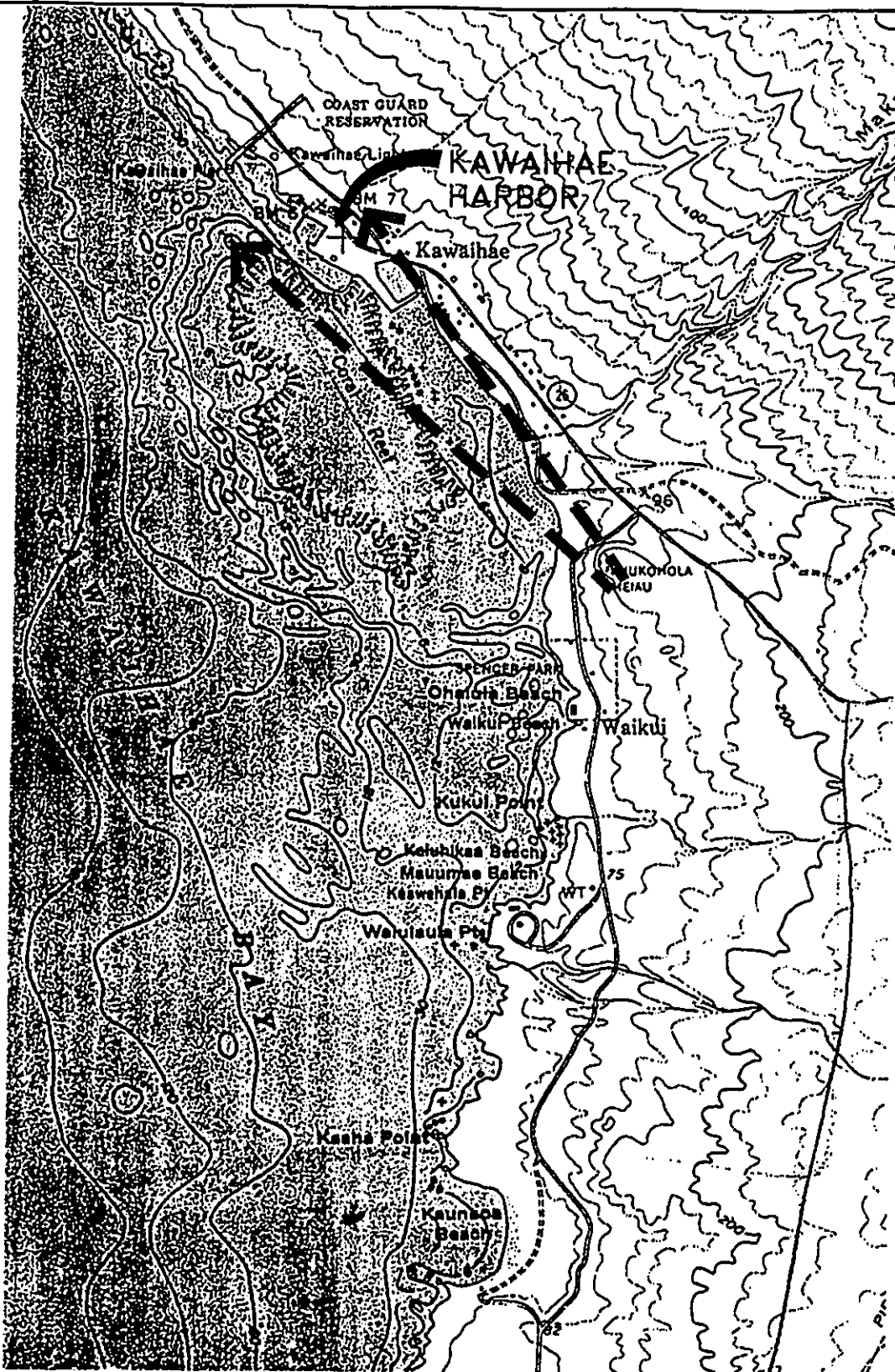


Figure [24] 35
View Planes and Scenic Vistas
KAWAIIHAE HARBOR VICINITY
Source: R. M. Towill Corporation

Ⓢ Not to Scale

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To reduce the visual impact of improvements from Kalaniana'ole Avenue, Harbors Division will provide landscaping as a buffer.

Kawaihae Harbor. Visual impacts from Puukohola Heiau National Historic Site will be reduced by selection of paint colors for sheds and potential liquid bulk tanks and pipelines.

4.6 RECREATIONAL RESOURCES

As industrial areas, the two harbors do not provide formal recreational opportunities. However, each harbor provides access to the public for recreational waterfront uses as follows.

4.6.1 Existing Conditions

Hilo Harbor

Fishing

The main recreational activity at Hilo Harbor is fishing off the three piers and in Radio Bay. *Daytime access to the harbor for fishing is relatively unrestricted. Fisherman must vacate areas that are being actively used for cargo handling or cruise ship berthing or when a fuel barge is berthed at a particular pier. Nighttime fishing (6 p.m. to 6 a.m.) is allowed with a fishing permit. Over 7,000 five-year, free-of-charge fishing permits for Hilo Harbor had been granted by the Harbors Division as of December 2000. On a typical day, approximately 30 people can be found fishing at the harbor (Personal Communication, Harbormaster, 2000).*

Twice annually, fishermen compete in the islandwide Casting Club fishing tournament and use Hilo Harbor as one of their fishing sites. Ulua weighing 50-70 pounds have been caught off the dock. More frequent catches are papio and halalu caught off the end of Piers 1 and 3 and mullet in Radio Bay (Personal Communication, John Moses, 2000).

Harbors Division's unwritten policy is to be supportive of fishing at Hilo Harbor because it meets community recreational needs and helps keep the harbor area secure -- in the past people fishing have been known to report suspicious activity at the harbor. The system of unrestricted daytime fishing and nighttime fishing by permit appears to be acceptable to both harbor management and the fishing community.

Mooring of Recreational Vessels

Radio Bay is often the temporary mooring site for itinerant recreational vessels. This area has ladders that lead up to the harbor.

Kawaihae Harbor

Fishing

Fishing at Kawaihae Harbor is available to the public during daylight hours with no permits required. Fishing occurs along the existing piers of the harbor and in the area designated as a fishery under the jurisdiction of the Department of Land and Natural Resources.

Recent vandalism and nighttime loitering have prompted Harbors Division to erect a chain-link fence to restrict vehicular access to the coral stockpile area at night, although nighttime fishing is still allowed.

Mooring of Recreational Vessels

Kawaihae Harbor is bordered north and south by small boat harbors which are administered by the State Department of Land and Natural Resources (DLNR). The northernmost small boat harbor has shoreside facilities including a boat ramp and rest rooms. The southernmost small boat harbor is unimproved except for a harbor breakwater constructed by the U.S. Army Corps of Engineers.

Cooperation between DLNR and Harbors Division has allowed small boats to moor within the breakwater in the commercial harbor area. Consultation with DLNR revealed that as of December 2000, within the harbor basin 34 Mooring Permits (Form LNR 3-137) were in force along the southeast perimeter of the inner harbor. This area provides access to the shore through use of a small wooden pier (FIGURE [25] 36).

When granted, mooring permits within the harbor basin managed by Harbors Division carry the following attachment from DLNR that must be signed by the mooring assignee:

"Your mooring assignment is provisional based upon the future needs of the harbor. While we do not anticipate the Harbors Division expanding their operations in the near future we must be prepared for that contingency. Your mooring assignment is based upon this possibility ... We therefore must inform you in advance that should the Harbors Division reclaim the mooring area you will be required to move your vessel upon ninety (90) days notice. [Neither] the

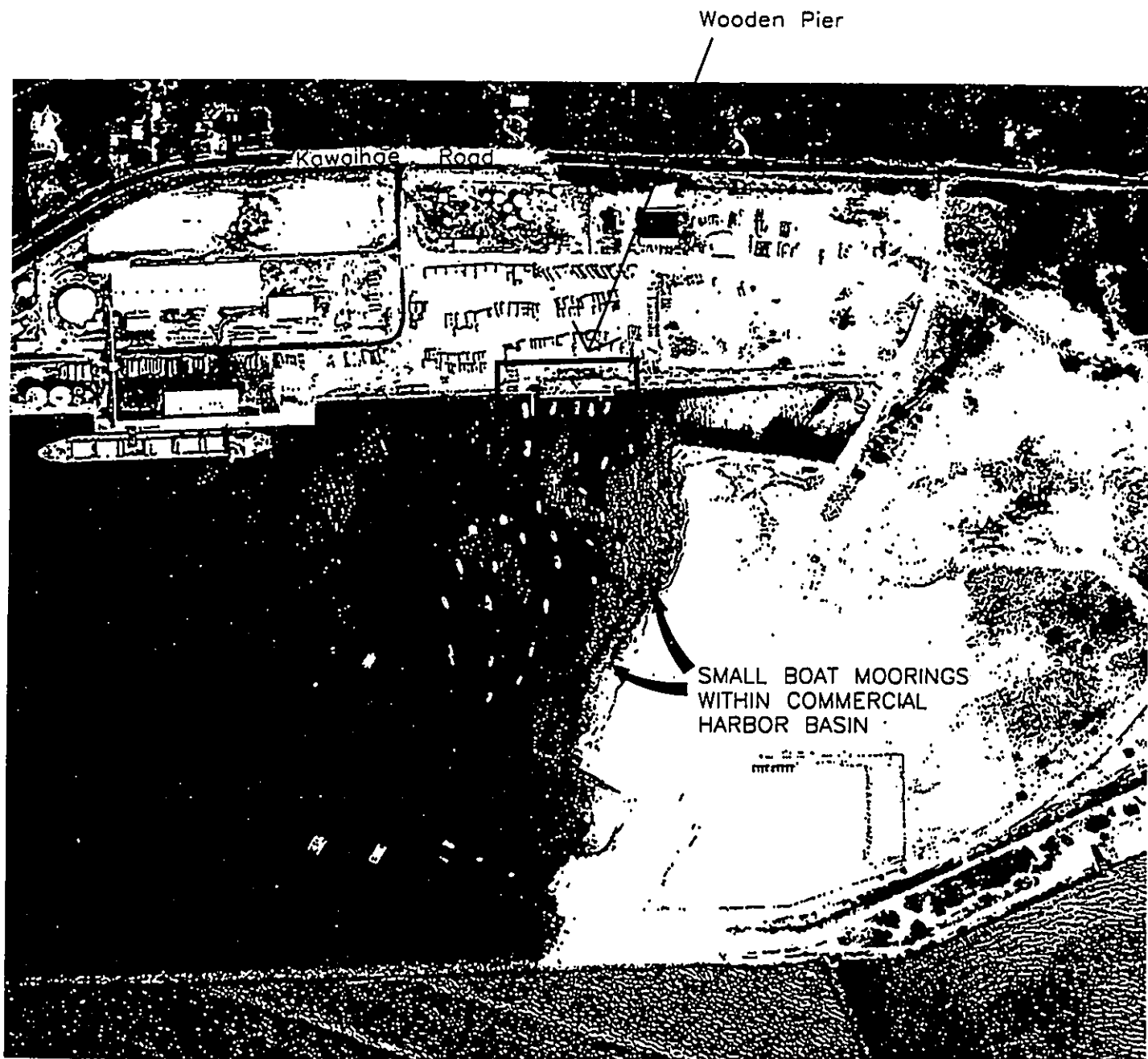


Figure [25] 36
Location of Small Boat Moorings
KAWAIHAE HARBOR
Aerial Photography by R. M. Towill Corp.



Not to Scale

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Harbors Division nor DLNR-Boating Division makes any assurances that another mooring will be available at Kawaihae Harbor or any other facility."

Waterfront Activities

The following observation was made by the marine biologist who spent several days surveying the marine environment at Kawaihae Harbor for this EIS: "At present the shoreline along the southeast side of the harbor is a beach area that was formed from dredge tailings material when the present harbor was formed. Although the beach is not particularly attractive and is composed of packed sediment and cobbles it is apparently quite popular with the public for recreational use, approximately 30 people having been observed to use the area each day on September 16 and 17, 2000 (a Saturday and Sunday) when the present survey was conducted. This popularity is apparently because rocks dredged up to near the shore in harbor construction form small tide pools and quiet swimming areas that are used by families with small children" (AECOS, Inc., 2000).

Surfing and sailing recreation facilities are accommodated in the harbor area but occur outside the breakwater.

- The organization Pua Kailima o Kawaihae is a non-profit organization which supports continued access to the shoreline, particularly for surfing. Under a 1998 Cooperative Agreement with Harbors Division, the organization maintains a "cultural surf park" on 0.86 acre[s] on the ocean side of the military LST/LSV ramp. In its designated area the group has constructed outdoor showers, a storage area for surfing and sailing vessels and a landscaped area with a sign bearing the name "Pua Kailima o Kawaihae."
- Near the southerly small boat harbor the YMCA conducts a youth sailing program at the harbor using a building originally constructed for filming of a television series "Wind on Water" and later abandoned. The structure has no restrooms. Several outrigger canoe clubs use the calm waters of the inner harbor for practice and racing. The non-profit educational organization associated with the sailing canoe Makalii has been provided temporary shed space free of charge at the harbor until Harbors Division is able to find a paying tenant.

4.6.2 Potential Impacts

Hilo Harbor.

Fishing

The area available for fishing off improved piers will be increased since no fishing is possible along the entire Baker's Beach coastline. Piers 4, 5 and 6 will provide improved surfaces for fishing that currently do not exist. Dredging and construction of proposed Piers 4, 5 and 6 could result in changes in tidal currents in Reed's Bay and the circulation of water. This could affect the movement of fish through Hilo Bay, particularly during construction.

Recreational Vessels

No impact is seen for recreational vessels in Hilo Harbor, as they will continue to be able to use Radio Bay area for transient mooring under the 2020 Master Plan.

Kawaihae Harbor. The existing fishery area will be retained in the planning of new piers. It is possible that dredging and pier construction will reduce the diversity of fish in the harbor area. This is evidenced currently by the current difference in marine biological diversity between pier areas and unimproved areas.

Recreational Vessels

Construction of Piers 4, 5 and 6 will require all small boats to find alternate mooring sites because of the location of the piers. Also, the wooden pier currently used by boaters for access to the harbor will be replaced by a commercial pier. As illustrated by the wording of boat mooring contracts quoted above, small boat owners have formally acknowledged official notice that their individual mooring within the harbor is on a provisional basis pending future harbor development.

Completion of improvements within the southernmost small boat harbor will potentially provide alternate mooring sites for these boats. Removal of small boats from the commercial harbor will result in a larger turning basin for vessels maneuvering into the piers. This will in turn result in safer conditions for commercial vessels operating in the harbor.

Swimming and other Waterfront Activities

Under the 2020 Master Plan, swimming will be curtailed to the undeveloped shoreline of the U.S. Army LST/LSV ramp and within the small boat harbors. Sailing and surfing will be able to continue because these activities take place outside the harbor.

Outrigger canoe paddling practice could eventually be restricted to the two small boat harbors when harbor development increases in the future. However, Harbors Division has no plans to restrict access to the commercial harbor for canoe paddlers unless the harbor is truly busy and the safety of the paddlers is jeopardized. Commercial vessels rarely use the harbor on Saturdays and there is usually no conflict with paddling except when a vessel is arriving or departing the commercial harbor (Personal Communication, Harbormaster, 2001).

4.6.3 Proposed Mitigation Measures

Hilo Harbor. Construction of piers which are designed as decks supported by concrete piles (see section 2.5.4) will minimize the disruption of tidal currents and circulation of water that could affect fishing in Hilo Bay that could affect fishing at the harbor.

Kawaihae Harbor. With regard to the eventual need to eliminate mooring of small vessels in the commercial harbor, Harbors Division will continue to encourage the Department of Land and Natural Resources to develop the southernmost small boat harbor shore access and amenities.

4.7 LAND TENURE

4.7.1 Existing Conditions

Issues related to land tenure pertinent to the 2020 Master Plan include: 1) the need for transfers of title for certain parcels that will be required for proposed development at Hilo Harbor; and 2) the use of ceded lands for harbor development.

Hilo Harbor.

Need for Land Transfers

Certain areas must be transferred to the Harbors Division for the proposed harbor development to proceed within TMK (3) 2-1-07 (FIGURE[26] 37). Harbors Division will request transfer of the Baker's Beach Lease Lots and the access road that leads to them from DLNR in order for development of Piers 4, 5 and 6 to proceed. The possibility of providing a pedestrian walkway

TMK: 2-1-06 TMK: 2-1-07

PORTION OF ABANDONED RAILROAD RIGHT-OF-WAY TO BE REQUESTED FOR TRANSFER FROM DLNR TO HARBORS DIVISION FOR HARBOR DEVELOPMENT

CONTINUATION OF ABANDONED RAILROAD RIGHT-OF-WAY

EXISTING ACCESS TO BAKER'S BEACH LEASE LOTS

KUMAU STREET PLANNED FOR ADDITIONAL FUTURE ACCESS TO HILO HARBOR

KEAA STREET NOT PLANNED FOR USE AS ACCESS ROAD TO HILO HARBOR

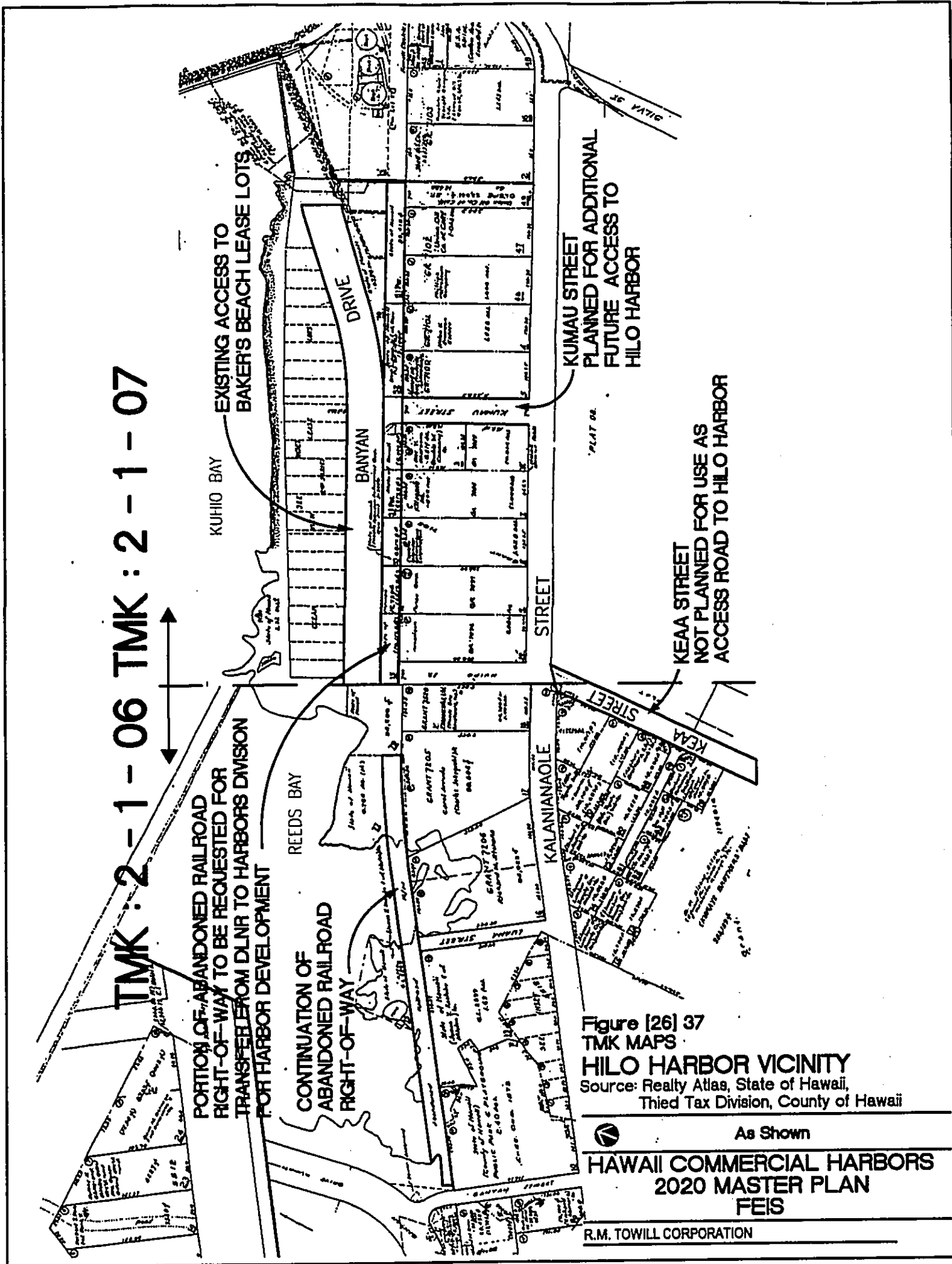


Figure [26] 37
 TMK MAPS
 HILO HARBOR VICINITY
 Source: Realty Atlas, State of Hawaii,
 Third Tax Division, County of Hawaii

As Shown
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along an abandoned railroad right-of-way which extends into TMK (3) 2-1-06 will be discussed at that time. Access to the proposed Piers 4, 5 and 6 will be through Kumau Street, which is the current access to the Baker's Beach Lease Lots, rather than through nearby Keaa Street.

Ceded Lands

According to the Harbors Division Property Management records, only a very small area of Harbors property is located on ceded lands (FIGURE [27] 38).

Kawaihae Harbor.

Ceded Lands

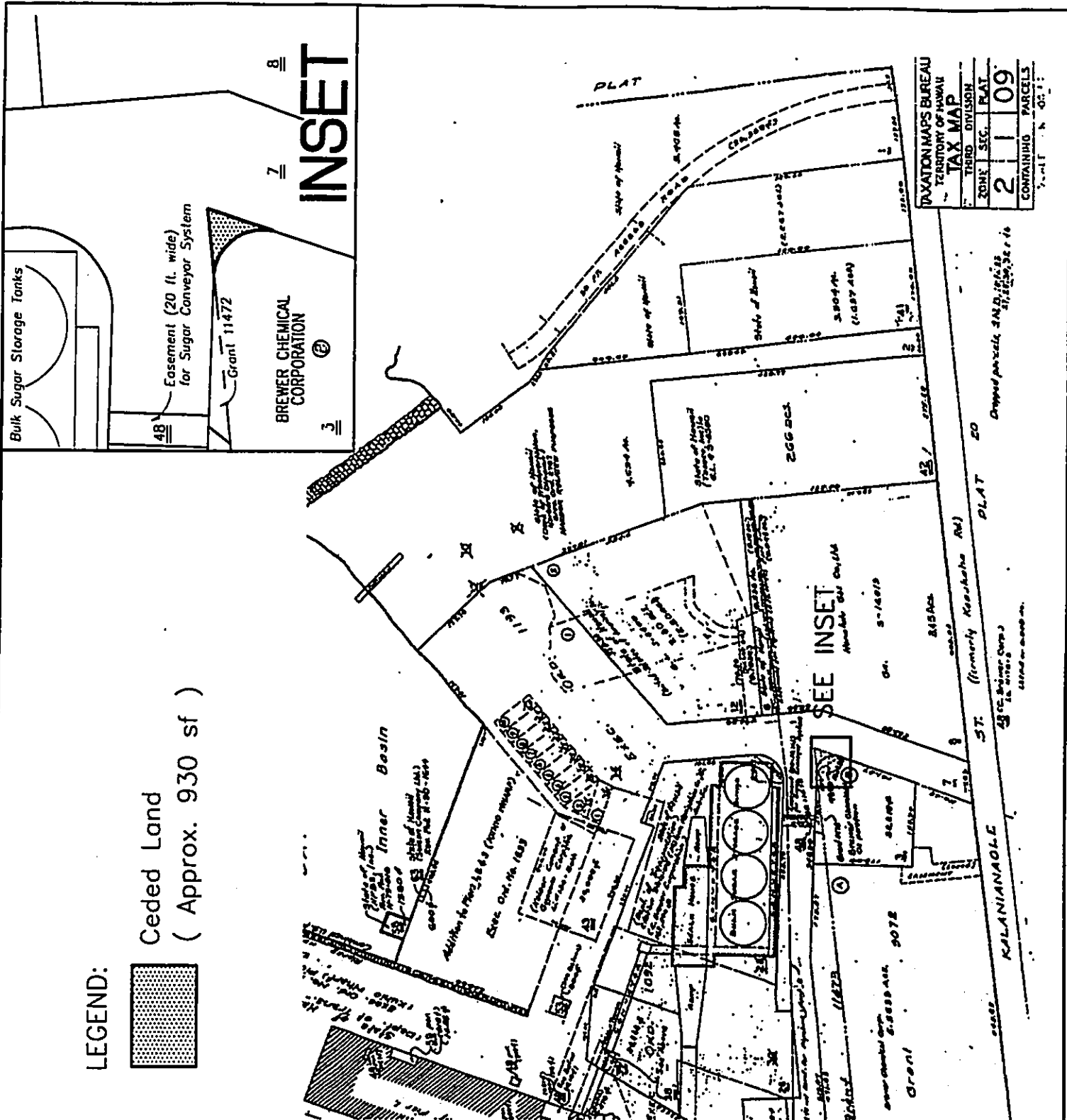
According to Harbors Division Property Management records, portions of Kawaihae Harbor are located on ceded lands (FIGURE [28] 39). When Hawaii became a State in 1959, the disposition of former Crown and Government lands (ceded lands) were established in section 5 of the Admission Act. Section 5(f) of the Admission Act provides that these lands and the income and proceeds derived from them are to be held in trust by the State of Hawaii. Submerged lands in the State of Hawaii are a part of the ceded lands trust. Section 5 of the Admission Act states that *ceded lands are to be utilized for the making of public improvements and the provision of lands for public use.* The proposed improvements at Kawaihae Harbor are consistent with these purposes for ceded lands.

4.7.2 Potential Impacts

Hilo Harbor. If Harbors Division is unable to obtain the transfer of lands from DLNR at Hilo Harbor, development of Piers 4, 5 and 6, cruise ship passenger terminal and Ocean Research Facility will not be able to proceed.

The possible pedestrian walkway along the abandoned railroad right of way would increase access to the harbor for cruise ship passengers to the Banyan Drive area and Hilo Town.

Kawaihae Harbor. The proposed improvements under the 2020 Master Plan would result in further development of ceded lands that are currently unimproved.



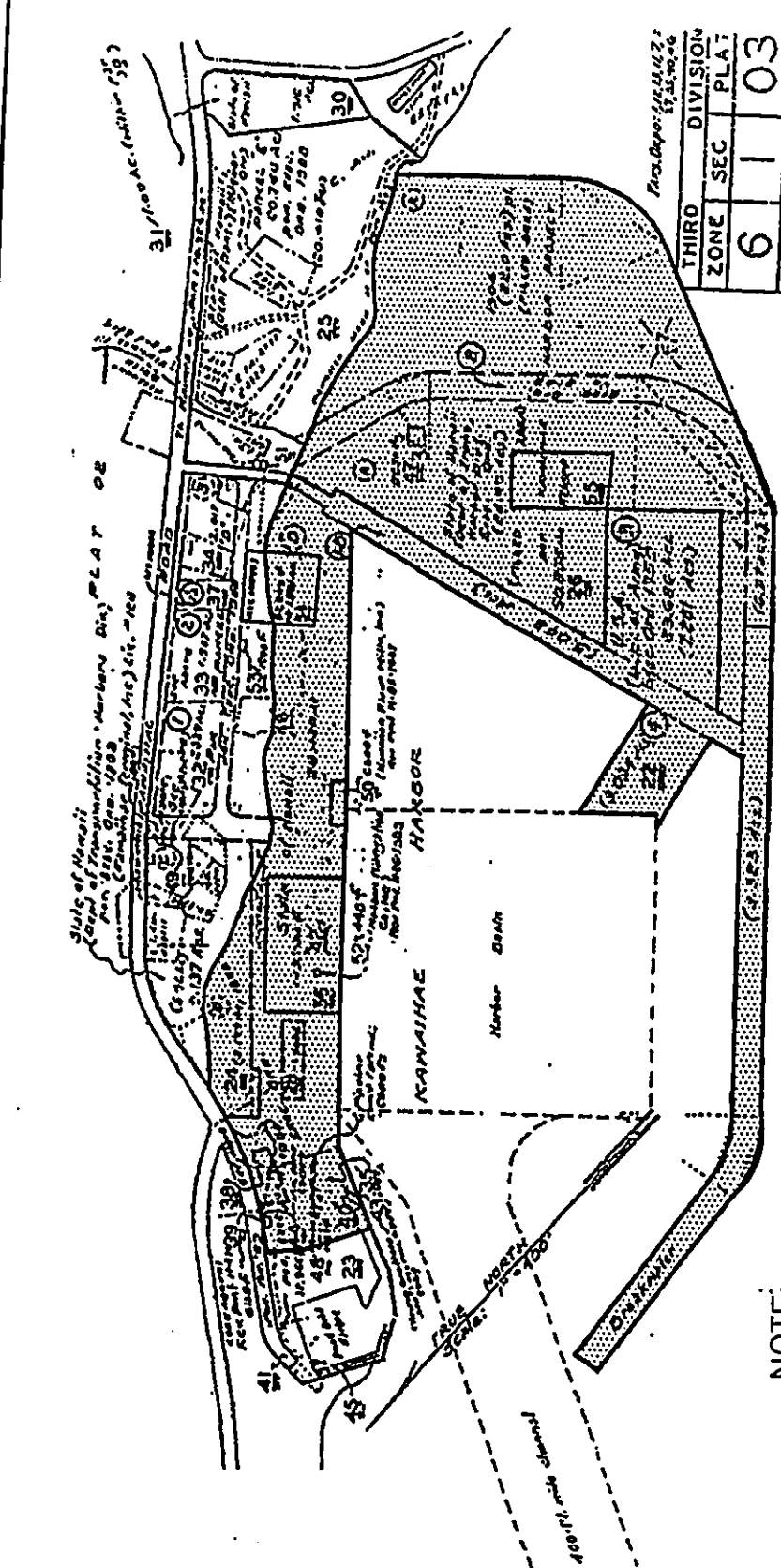
TAXATION MAPS BUREAU	
TERRITORY OF HAWAII	
TAX MAP	
ZONE	PLAT
2	2109
CONTAINING PARCELS	
SHEET NO. 051	

Figure [27] 38
CEDED LAND
HILO HARBOR
 Source: Harbors Division Property Management

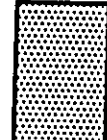
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NOTE:
 Area of Ceded Lands = Approximate 72 Acres,
 including the breakwater area.

LEGEND:
 Ceded Lands

SCALE IN FEET
 0 100 200 300 400 500

Figure [28] 39
 CEDED LAND
 KAWAIHAE HARBOR
 Source: Harbors Division Property Management
 As Shown
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4.7.3 Proposed Mitigation Measures

Hilo Harbor. Harbors Division must successfully complete the needed land transfers and agreements with other governmental agencies cited above in order for certain harbor improvements to proceed as described above (Section 4.7.2). No mitigation measures are proposed for the issue of the use of ceded lands because the harbor improvements are in concert with the established purposes.

Kawaihae Harbor. No mitigation measures are proposed, as Harbors Division plans to continue to use ceded lands at Kawaihae Harbor in a manner consistent with the Admissions Act.

CHAPTER 5

RELATIONSHIP TO PLANS, POLICIES AND CONTROLS

5.1 APPLICABLE ENVIRONMENTAL RULES AND REGULATIONS

The EIS preparation and review process is pursuant to all applicable [f]Federal, State and [c]County environmental statutes, rules, regulations and ordinances. This includes, but is not necessarily limited to, the following:

National Environmental Policy Act of 1969
Section 7, Endangered Species Act
Section 106, National Historic Preservation Act of 1966, as amended
Clean Water Act, as amended
Coastal Zone Management Act
Chapter 343, Hawaii Revised Statutes
Title 11, Chapter 200, State of Hawaii, Department of Health Administrative Rules

5.2 FEDERAL LAND USE PLANS AND POLICIES

Land use policies, plans, and controls administered by the Federal government which affect the proposed action are described in the following sections.

5.2.1 Clean Water Act (CWA)

The Clean Water Act, Section 404:

- Defines requirements for discharges of dredged or fill materials in waters of the United States.
- Sets limits on such discharges.

Permit approvals are obtained from the Army Corps of Engineers (ACOE). [Other planned improvements could require an Approval of Drainage Outfall by ACOE.]

According to 33 CFR 232.2 (d)(3)(ii), a Section 404 permit would not be required for any incidental movement of dredged material occurring during normal dredging operations (defined as dredging for navigation in navigable waters of the United States).

It is likely that a Section 404 Permit will be required for the proposed actions at both harbors because of plans for dredging as well as "infilling" during piling operations that would be considered a discharge of fill material in the water.

5.2.2 Water Quality Certification (Section 401 Clean Water Act)

A Water Quality Certification (WQC) is required when proposed construction or operation may result in discharges into State waters pursuant to the Federal CWA. In Hawaii, the State Department of Health (DOH) has authority for project review and issuance of the WQC under Hawaii Revised Statutes (HRS) Chapter 342D and associated Hawaii Administrative Rules (HAR) 11-54.

Since it has been determined that the proposed action will result in the discharge of fill materials requiring a CWA Section 404 permit, a CWA Section 401 Water Quality Certification (WQC) will also be required.

5.2.3 NPDES Permit (Section 402 Clean Water Act)

A NPDES permit will be required for the proposed harbor improvements. Discharges of point sources of pollutants into surface waters of the U.S. are regulated under the National Pollutant Discharge Elimination System (NPDES) program, pursuant to CWA, Section 402. In Hawaii, the DOH administers the NPDES program under HAR 11-55.

NPDES permits are available under General or Individual categories. General permits are available for activities that meet specific criteria, such as construction-related storm water discharges, hydrotesting, and construction dewatering. The Individual Permit has greater flexibility, but involves a longer process, including Public Notice of Permit Application.

Separate Notices of Intent (NOIs) are required for NPDES General Permit coverage for hydrotesting, dewatering, or discharges to surface waters of construction-related stormwater from sites equal to or greater than 5 acres in size. Discharge of dewatering effluent associated with dredged sediment would require NPDES permit coverage as well. The NOI submitted with the NPDES permit application requires development of a Best Management Practices plan, in accordance with HAR 11-55. Discharges for storm water associated with construction activity,

hydrotesting, dewatering and any industrial discharge under the proposed project will require NPDES permit approvals from DOH.

5.2.4 Rivers and Harbors Act

The Rivers and Harbors Act (RHA), Section 10, requires the issuance of a Department of the Army permit for any activity that obstructs or alters navigable waters of the U.S., or modifies the course, location, condition, or capacity of any port, harbor or refuge, or enclosure within the limits of any breakwater or of the channel of any navigable water. The USACE was consulted and has confirmed that a permit under Section 10, Rivers and Harbors Act, will be required for the proposed action.

5.2.5 Marine Protection, Research, and Sanctuaries Act

Section 103 of the Marine Protection, Research and Sanctuaries Act (MPRSA) (33 U.S.C. 1413) authorizes the USACE to issue permits for the transportation of dredged material for the purpose of dumping in ocean waters. Section 103 prohibits disposal activities that would unreasonably degrade or endanger human health or the marine environment.

The EPA and USACE have joint authority for regulating ocean disposal of dredged material and for managing ocean dredged material disposal sites (ODMDS) in the Hawaiian Islands. Under the MPRSA, Section 103, the USACE in coordination with the EPA has the authority to issue permits for ocean dumping. A USACE permit under Section 103 will not be required for Kawaihae Harbor, since dredged spoils will be kept on Harbors Division property. However, the proposed action in Hilo Bay will require such a permit because of the intended use of the EPA ocean dumping site for dredging spoils resulting from Hilo Harbor development.

5.2.6 Endangered Species Act and Marine Mammal Protection Act

The Endangered Species Act of 1973 and the Marine Mammal Protection Act of 1972 require that actions will not jeopardize the continued existence of endangered or threatened marine and terrestrial plant and animal species. The U.S. Fish and Wildlife Service (USFWS) has jurisdiction over certain Federally-listed threatened and endangered (T&E) species that occur in terrestrial and marine environments. The National Marine Fisheries Service (NMFS) has jurisdiction over marine mammals and fishes. The two agencies share responsibility for listed T&E sea turtles.

As discussed in Section 3.9, it is not anticipated that there will be any significant impacts to T&E marine and non-marine species as a result of the proposed project. However, protected marine species are known to "wander into" both harbors. Therefore, close coordination and consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service will be maintained during project planning and construction.

5.2.7 National Historic Preservation Act

Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations (36 CFR 800), are intended to provide for the protection and use of historic properties for the benefit of the public. The State Department of Land and Natural Resources - Historic Preservation Division (SHPD), oversees the historic preservation compliance process. The SHPD determines whether any historic sites exist and their historical significance.

As mentioned in Section 4.2, the archaeological investigation report determined that there were no significant historic structures on the project sites. Should the State Historic Preservation Division determine otherwise, then appropriate mitigation and preservation measures will be developed.

5.2.8 Native American Graves Protection and Repatriation Act

The proposed project will be conducted in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA). NAGPRA, which was passed into law in 1990, is intended to protect Native American (including [n]Native Hawaiian) burial sites. NAGPRA sets guidelines for the removal and subsequent repatriation of human remains and associated burial objects on Federal, Indian, and [n]Native Hawaiian lands.

NAGPRA requires consultation with [n]Native Hawaiian organizations, including the Office of Hawaiian Affairs and the State Historic Preservation Division (DLNR) if Hawaiian burials are encountered. Because of the highly disturbed nature of each harbor, it is unlikely that any human burials exist within the project site areas. However, should human remains be encountered, the above NAGPRA requirements will be met.

5.2.9 National Marine Sanctuaries Act

A Hawaii Whale Sanctuary is located near Kawaihae. *The National Marine Sanctuaries Act, 16 U.S.C. 1431 ET.SEQ., as amended by Public Law 104-283, includes the following among its purposes and policies: (1) to identify and designate as national marine sanctuaries areas of the marine environment which are of special national significance; and (2) to provide authority for comprehensive and coordinated conservation and management of these marine areas, and activities affecting them, in a manner that which complements existing regulatory authorities. Any development under the Hawaii Commercial Harbors 2020 Master Plan will comply with the National Marine Sanctuaries Act.*

5.2.10 Coastal Zone Management Act

The purpose of the Coastal Zone Management Act of 1972, as amended through P.L. 104-150, The Coastal Zone Protection Act of 1996, is to "preserve, protect, develop, and where possible, restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations" (National Oceanic and Atmospheric Administration, 2001).

According to the State of Hawaii, Coastal Zone Management Program Office, "Under the Federal consistency provisions of the Coastal Zone Management Act of 1972, as amended, all Federally licensed or permitted activities affecting the coastal zone must be conducted in a manner consistent with the State's approved management program. The State of Hawaii management program was approved September 1978. Consequently, any non-Federal applicant for a Federal license or permit is required to furnish a certification that the proposed activity will comply with the State's coastal zone management program. Generally, no permit will be issued until the State has concurred with the applicant's certification" (State of Hawaii, Office of Planning, 1987). Any development under the Hawaii Commercial Harbors 2020 Master Plan will comply with the Coastal Zone Management Act. See also Section 5.3.4, Coastal Zone Management Program, under "State Land Use Plans and Policies."

5.3 STATE LAND USE PLANS AND POLICIES

5.3.1 Hawaii State Plan (HRS 226)

The Hawaii State Plan is provided for under Hawaii Revised Statutes, Chapter 226, (1995) to serve as a guide for the future growth of the State of Hawaii. The Hawaii State Plan identifies goals, objectives, policies, and priorities for the development and growth. It provides a basis for prioritizing and allocating the states limited resources, including public funds, services, human resources, land, energy and water. The Hawaii State Plan establishes a system for the formulation and program coordination of State and County plans, policies, programs, projects, and regulatory activities and facilitates the integration of all major State and County activities.

The proposed action is consistent with the objectives and policies of the Hawaii State Plan. Specifically, the proposed action will increase and diversify the State's economic base through upgrading facilities for the shipping and tourist industries. Described below are sections of the Hawaii State Plan's goals, objectives, and policies that are relevant to the proposed action.

Part I - Goals, Objectives, and Policies

Hawaii State Plan, SEC. 226-8 Objectives and policies for the economy - visitor industry.

(b)(1) Support and assist in the promotion of Hawaii's visitor attractions.

Hawaii State Plan, SEC. 226-10 Objective and policies for the economy - potential growth activities.

(a) Planning for the State's economy with regard to potential growth activities shall be directed towards achievement of the objective of development and expansion of potential growth activities that serve to increase and diversify Hawaii's economic base.

(b) To achieve the potential growth activity objective, it shall be the policy of this State to: Facilitate investment and employment in economic activities that have the potential for growth such as diversified agriculture, aquaculture, apparel and textile manufacturing, film and television production, and energy and marine-related industries.

(5) Promote Hawaii's geographic, environmental, social, and technological advantages to attract new economic activities into the State.

(7) Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research.

Hawaii State Plan, SEC. 226-11 Objectives and policies for the physical environment land-based, shoreline, and marine resources.

(a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:

- (1) Prudent use of Hawaii's land-based, shoreline, and marine resources.
- (2) Effective protection of Hawaii's unique and fragile environmental resources.

(b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:

- (1) Exercise an overall conservation ethic in the use of Hawaii's natural resources.
- (2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.
- (3) Take into account the physical attributes of areas when planning and designing activities and facilities.
- (4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.
- (5) Pursue compatible relationships among activities, facilities, and natural resources.
- (6) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.

Hawaii State Plan, SEC. 226-17 Objectives and Policies for Facility Systems - Transportation

- (1) Provide for improved accessibility to shipping, docking, and storage facilities.
- (2) Encourage transportation systems that serve to accommodate present and future development needs of communities.
- (3) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment of storage needs.
- (4) Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification.

Hawaii State Plan, SEC. 226-103 Economic priority guidelines.

(a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawaii's people and achieve a stable and diversified economy:

(1) Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.

(A)(iv) Reinvest in the local economy.

(6) Encourage the formation of cooperatives and other favorable marketing or distribution arrangements at the regional or local level to assist Hawaii's small-scale producers, manufacturers, and distributors.

10 (b)(4) Encourage visitor industry practices of activities which respect, preserve, and enhance Hawaii's significant natural, scenic, historic, and cultural resources.

5.3.2 State Functional Plans

State Functional Plans are the primary guidelines for implementing the Hawaii State Plan. In contrast to the Hawaii State Plan which establishes long-term objectives, the State Functional Plans serve to establish objectives for shorter-term actions. Described below are specific sections of State Functional Plans which contain overall themes, goals, objectives, and policies, that relate to the proposed action.

State Transportation Functional Plan

The following sections of the State Transportation Functional Plan are relevant to the proposed improvements identified in the 2020 Master Plan:

Objective 1A: Expansion of the transportation system.

- 1) Increase transportation capacity and modernize transportation infrastructure in accordance with existing master plans and laws requiring accessibility for people with disabilities.

As public facilities, with public accommodations, the final designs for cruise passenger terminals will be required to comply with Titles II and III of the Americans with Disabilities Act of 1990 (ADA). Sections with particular significance to the proposed projects are following: Section 226 (New Facilities), Section 227 (Alterations of existing Facilities), and Section 303 (New Construction and Alterations in Public Accommodations and Commercial Facilities).

Objective 1D: Identify reserve and acquire land for future transportation improvements.

State Conservation Lands Functional Plan

The objective of the State Conservation Lands Functional Plan is to provide for a management program allowing for judicious use of the State's natural resources balanced with the need to protect these resources to varying degrees. Objectives and policies that would be met by the completion of the proposed projects are presented below.

Objective IIE: Promotion and marketing of appropriate natural resources designated for commercial development.

Policy IIE(4): Assist the fishing industry to develop new markets and improve production and processing of fishery products.

5.3.3 State Land Use Law (Hawaii Revised Statutes, Chapter 205)

The State of Hawaii classifies all land into four districts: Urban, Conservation, Agricultural, and Rural. Changes to the boundaries of any conservation district and other districts greater than 15 acres must be approved by the State Land Use Commission. Changes to boundaries of districts other than conservation districts of less than 15 acres can be approved by the county land use authority.

The proposed action would involve activity on two land classes - Urban and Conservation. County of Hawaii land uses within the Urban District are regulated by the [through the] Zoning Code. The State Department of Land and Natural Resources regulates land uses in the Conservation District, including submerged lands in each harbor.

Harbors Division has an existing Conservation District Use Permit from the BLNR for any maritime construction activities in the harbors which would allow construction of the proposed projects to proceed.

5.3.4 Coastal Zone Management Program (Special Management Areas)

The Coastal Zone Management Act of 1972 (P.L. 92-583) is administered in Hawaii by the Office of Planning of the Department of Business, Economic Development, and Tourism. The objectives and policies of the Hawaii Coastal Zone Management (CZM), as set forth in Hawaii Revised

Statutes, Chapter 205A are to provide recreational resources; protect historic, scenic, and coastal ecosystem resources; provide economic uses; reduce coastal hazards; and manage development in the coastal zone.

Chapter 205A outlines controls and policies for development within an area along the shoreline referred to as the Special Management Area (SMA). SMA policies relating to the proposed action are administered by the County of Hawaii. Environmental concerns are also addressed through the CZM consistency review process. The entire Island of Hawaii is within the coastal zone area affected by the CZM Act.

5.3.5 Hawaii Long Range Land Transportation Plan

This plan, developed specifically for the Island of Hawaii, is utilized in developing a Statewide Transportation Plan that fulfills requirements of the Intermodal Surface and Transportation Efficiency Act (ISTEA) of 1991. The major outputs of this plan are forecast of transportation demand, potential transportation improvements, and a resulting long range land transportation plan. Projects are "tiered" within future time frames according to their priority.

5.3.6 Statewide Transportation Plan (STP)

The Department of Transportation - Highways Division is responsible for developing the Statewide Transportation Plan based on the Long Range Land Transportation Plan for each county (Section 5.3.5).

5.4 COUNTY OF HAWAII PLANS AND POLICIES

5.4.1 General Plan for the County of Hawaii

The County of Hawaii's General Plan is the policy document for the long-range comprehensive development of the Island of Hawaii. The General Plan provides direction for the future growth of the County (County of Hawaii, 1989). The General Plan is currently undergoing revision and is before the County Planning Commission for review. The 2020 Master Plan is consistent with the [following] policies in the currently-approved General Plan for the County of Hawaii, as follows:

Economic

The County of Hawaii shall encourage the development of the tourism industry which is consistent with the social, physical, and economic goals of the County. ***This includes tourism destinations along the coast in South Kohala and tourism activities in Hilo.***

Environmental Quality

The County of Hawaii shall take positive action to further maintain the quality of the environment for residents both in the present and in the future. ***Potential environmental impacts of the 2020 Master Plan and proposed mitigation measures are presented in Chapters 3 and 4 of this FEIS.***

Flood Control and Drainage

In areas vulnerable to severe damage due to the impact of wave action, restrictive land use and building structure regulations must be enacted relative to the potential for loss of life and property. Only uses which cannot be located elsewhere due to public necessity and character, such as maritime activities and the necessary public facilities and utilities, would be allowed in these areas. ***Harbor facilities fall into the category of "uses which cannot be located elsewhere." All planned harbor development will follow land use regulations for flood-prone areas.***

Natural Resources and Shoreline

The County of Hawaii should require users of natural resources to conduct their activities in a manner that avoids or minimizes adverse effects on the environment. ***Harbor activities will not utilize natural resources, but Harbors Division will follow all applicable environmental regulations as well as implement mitigation measures to eliminate or minimize potential impacts.***

Public Facilities

The County shall coordinate with appropriate State agencies for the provision of public facilities to serve the needs of the community. ***The 2020 Master Plan was developed collaboratively with County of Hawaii officials to ensure that harbor facilities will serve the needs of the two subject communities.***

Transportation

Provide a transportation system whereby people and goods can move efficiently, safely, comfortably and economically. *The 2020 Master Plan provides essential infrastructure for the Island of Hawaii.*

5.4.2 County of Hawaii Zoning and Land Use Designations

Hilo Harbor is located in MG-1A and Open zoning designations. Kawaihae Harbor is in MG-1A, Open/RM-1.5 and Open. No changes in zoning are anticipated with this project. *The County of Hawaii land use designations are Industrial for Hilo and Industrial/Open for Kawaihae Harbor.*

5.5 RELATED LAND USE PLANS

Consultation with the State Office of Planning, Hawaii County Planning Department and the Department of Hawaiian Home Lands revealed the following land use plans that are relevant to the proposed development. The most recent plan cited in consultation for South Kohala was dated 1992. No relevant plans for development in Hilo were noted.

5.5.1 West Hawaii Regional Plan (1989)

This plan was commissioned by the State Office of Planning to coordinate State activities and capital improvements and provide guidance for land use decision making. The South Kohala area where Kawaihae Harbor is located was characterized as dominated by the tourist industry, with major resorts the primary economic engine. Kawaihae Harbor is mentioned as critical infrastructure for both military activities through the Landing Ship Tank facility and for cargo. In this plan, the Kawaihae to Waikoloa area is seen as a "support community" for the West Hawaii Region or "large, new residential communities that would house employees of the region and offer a range of support services, convenience stores, and other community facilities." The plan recognizes the need for commercial harbor expansion at Kawaihae to support the development of West Hawaii Region:

"The Kawaihae to Waikoloa area is a logical area [for a support community] given its wide variety of existing and proposed land uses: the expansion of Kawaihae deep draft Harbor; the urbanization of Hawaiian Home Lands at Kawaihae for industrial,

commercial, agricultural-pastoral, and residential homesteading purposes; the planned expansion of Waikoloa...and the common set of infrastructure problems facing the Kawaihae-Waikoloa area, i.e., road development/realignment and water availability" (Office of Planning, 1989).

5.5.2 Kawaihae Ten-Year Master Plan, Kawaihae, South Kohala, Hawaii (1992)

The Department of Hawaiian Home Lands owns approximately 10,000 acres in the Kawaihae Area. The Ten-Year Master Plan covers 2,115 acres in the southwest corner of the property. Proposed land uses include 1,197 acres of residential land uses plus community facilities, commercial and industrial development and a town center. Approximately 227 acres of the property, located directly across Kawaihae Road from Kawaihae Harbor, is planned for industrial use.

If the Department of Hawaiian Home Lands follows through with this plan it could create an opportunity for future expansion of harbor-related industrial land uses on DHHL lands. During past development of the harbor, liquid bulk pipelines were constructed with an eye to developing liquid bulk storage facilities on the DHHL lands, although this was never implemented.

5.5.3 Plans by the Puukohola Heiau National Historic Site

The Director of this National Park Service (NPS) facility indicates that its main activities will continue to be protection of the heiau and studies to understand it better, and to help the public understand the importance of existing sites. Future land use plans include construction of a new visitor center and maintenance facility on Federal property. The NPS will continue to use a trail through Harbors Division lands (under Cooperative Agreement) to access the John Young house. Eventually the Harbors Division lands will be used to access the Pelekane lands below the Puukohola temple. In conjunction with that, NPS plans to remove the "Old Spencer Road" on Federal property (Personal Communication, Daniel Kawaiaea, May 2001).

5.6 RELATED LAND USE COMMISSION DOCKETS AND OTHER PROJECTS

A review in May 2001 of the Land Use Commission's approvals and pending land use reclassifications yielded the information contained in Sections 5.6.1, 5.6.2 and 5.6.3.

5.6.1 Land Use Reclassifications - Hilo Harbor Vicinity (South Hilo)

The most recently approved land reclassification in the Hilo area was in 1994. The reclassification was for 288 acres from residential to agricultural district for Brewer Properties. There is currently a pending land use reclassification before the Land Use Commission for 885 acres owned by the Newton Family Limited Partnership to convert lands from Conservation to Agricultural to allow subdivision of lots among family members.

5.6.2 Land Use Reclassifications - Kawaihae Harbor Vicinity (South Kohala)

The only major land use reclassification in South Kohala in the past ten years involved reclassification from the Agricultural to Urban District for the Hapuna Beach Resort in 1994 (317 acres). This resort property has been developed. Previous dockets also involved properties which have been developed for some time, such as Kohala Ranch (1988) and Mauna Lani Resort (1986).

5.6.3 Other Projects

The Final Environmental Impact Statement for the Saddle Road Extension, South Kohala, North Kona, was accepted in 2000 and a portion of the project is now in design. The closest point from that project is approximately 23 road miles from Kawaihae Harbor and 10 road miles from Hilo Harbor (Personal Communication, Bruce Meyers, Okahara & Associates, 2001). The Kawaihae 1.0 Million Gallon Tank, for which a Draft Environmental Assessment was prepared in 2000, is currently inactive. This parcel is approximately 4,000 feet directly north of the Kawaihae Harbor entrance, at the 280-foot elevation. The proposed tank is located on property of the State of Hawaii, Department of Hawaiian Home Lands. This information was obtained as a result of consultation with the County of Hawaii, Departments of Planning and Public Works.

5.7 CUMULATIVE IMPACTS OF RELATED PROJECTS

With the exception of the Department of Hawaiian Home Lands Master Plan for Kawaihae, the primary projects slated for the South Kohala in the past ten years have already been implemented and are primarily resort developments. No major projects are slated for South Hilo. Because of the time elapsed since development of the South Kohala resorts, the associated mitigation measures have been required to be implemented. As a result, no significant cumulative impacts are expected from related projects.

CHAPTER 6 NECESSARY PERMITS AND APPROVALS

The following permits and approvals may be required prior to project construction. As design for the proposed harbor improvements proceeds, Harbors Division will continue its consultation with the following agencies to ensure that all required permits are obtained.

County of Hawaii permits are not required for actions taken by Harbors Division, pursuant to Section 266-2(b), Hawaii Revised Statutes. However, actions by *tenants* on Harbors Division property would be subject to County of Hawaii permitting *such as Special Management Area Permit, Shoreline Setback Variance, Flood Hazard Controls, Grading, Grubbing, Excavating and Stockpiling Permits, and Building Permits. Approval of "Drainage Outfall" and "Rivers and Harbors Act" were struck as a result of consultation with the U.S. Army Corps of Engineers. These are covered by Department of the Army permits.*

Permits or approvals listed below are organized by Federal, State and County requirements. The column entitled "Order" denotes the order in which Harbors Division is likely to apply for the listed permits.

Permit or Approval	Level of Government	Granting Agency	Why Required	Order
Department of the Army Permit	Federal	U.S. Army Corps of Engineers	Construction of structures or work within navigable waters	3
[Approval of Drainage Outfall]	[Federal]	[U.S. Army Corps of Engineers]	[Construction of drainage outfall]	N/A
Section 103 Marine Protection, Research and Sanctuaries Act	Federal	U.S. Army Corps of Engineers	Handling and disposal of dredged materials in ocean waters	15
[Rivers and Harbors Act]	[Federal]	[Dept. of the Army]	[Activities that obstruct or alter navigable waters]	N/A

Permit or Approval	Level of Government	Granting Agency	Why Required	Order
401 Water Quality Certification	State of Hawaii	Dept. of Health	Work near a body of water	2
National Pollutant Discharge Elimination System (NPDES) Permit	State of Hawaii	Dept. of Health	Increasing the quantity of any discharge and storm water runoff	9
Coastal Zone Management Federal Consistency Determination	State of Hawaii	Office of Planning	All lands and waters in the [s]State	1
Historic Preservation Review	State of Hawaii	Dept. of Land and Natural Resources	Sites over 50 years old	7
Federal Section 106 Review, Protection of <i>Historic Properties</i>	State of Hawaii	Dept. of Land and Natural Resources	Initial consultation	8
Shore and Shorewaters Permit	State of Hawaii	Dept. of Land and Natural Resources	Placing or erecting any structure in shorewaters	5
Conservation District Use Permit	State of Hawaii	Dept. of Land and Natural Resources	Lands designated by the [s]State, including submerged lands	4
Public Land Dispositions	State of Hawaii	Dept. of Land and Natural Resources	State-owned lands including submerged lands	16
State Highways Permit	State of Hawaii	Dept. of Transportation	Construction work within or next to State Highway right-of-way	14

Permit or Approval	Level of Government	Granting Agency	Why Required	Order
Non-Covered Source Air Permit	State of Hawaii	Dept. of Health	Minor source of air pollution (during construction)	12
Permit to Construct a Wastewater System	State of Hawaii	Dept. of Health	Construction of waste water system	10
Hazardous Waste Permit	State of Hawaii	Dept. of Health	Treatment, disposal and storage of hazardous waste	11
Asbestos Regulations	State of Hawaii	Dept. of Health	Removing or managing asbestos	13
Shoreline Certification	State of Hawaii	DAGS DLNR	Shoreline determination	6
[Special Management Area Permit (Major)]	[County of Hawaii*]	[Planning Dept./ Planning Commission]	[Any activity classified as development that has a value of \$125,000 or more or that will have significant environmental or ecological effect]	N/A
[Shoreline Setback Variance]	[County of Hawaii*]	[Planning Dept.]	[Construction or subdivision activities in shoreline areas]	N/A
[Flood Hazard Controls]	[County of Hawaii*]	[Dept. of Public Works]	[Any development in a flood zone area]	N/A

Permit or Approval	Level of Government	Granting Agency	Why Required	Order
[Grading, Grubbing, Excavating, and Stockpiling Permits]	[County of Hawaii*]	[Dept. of Public Works]	[Any excavation or fill, the removal of vegetation from the surface of the ground, or purposeful accumulation and set-aside of loose soil]	N/A
[Building Permit]	[County of Hawaii*]	[Dept. of Public Works]	[Erecting, constructing, enlarging, demolishing, or altering any building or structure]	N/A

Source: Guide to State Permits and Approvals for Land and Water Use and Development, State of Hawaii, Office of Environmental Quality Control, 1996.

[*County of Hawaii permits are not required for actions taken by Harbors Division, pursuant to Section 266-2(b), Hawaii Revised Statutes. However, actions by tenants on Harbors Division property would be subject to County of Hawaii permitting.]

CHAPTER 7

AGENCIES, ORGANIZATIONS AND INDIVIDUALS CONSULTED IN THE PREPARATION OF ENVIRONMENTAL IMPACT STATEMENT

7.1 SCOPING AND CONSULTATION PROCESS

This section describes the EIS consultation program and lists all agencies, organizations and individuals who have been consulted in preparation of this EIS.

OEQC Planners Meeting

On October 31, 2000, representatives of the Harbors Division presented an overview of the Hawaii Commercial Harbors 2020 Master Plan at a Planner's Meeting sponsored by the Department of Health, Office of Environmental Quality Control. This meeting also included representatives of the Department of Health, Environmental Planning Office and the Office of Planning, Coastal Zone Management Program.

Environmental Impact Statement Preparation Notice

An Environmental Impact Statement Preparation Notice was published in the Office of Environmental Quality Control Bulletin on November 8, 2000. Comment letters received, and responses to those letters, are contained in APPENDIX A. The organizations and parties listed below received a copy of the Environmental Impact Statement Preparation Notice.

Federal Agencies

- Program and Project Management, U.S. Army Corps of Engineers
- Pacific Islands Ecoregion Manager, Department of the Interior, U.S. Fish & Wildlife Service
- Superintendent, National Park Service, Pacific Islands Support Office
- Civil Engineering Unit, U.S. Coast Guard

State Agencies

- State of Hawaii, Director, Department of Hawaiian Home Lands
- State of Hawaii, Director, Department of Health, Office of Environmental Quality Control
- State of Hawaii, Administrator, Department of Transportation, Harbors Division
- State of Hawaii, Director, Department of Health
- State of Hawaii, Chairperson, Department of Land and Natural Resources
- State of Hawaii, Administrator, Office of Hawaiian Affairs
- Director, Office of Planning

County Agencies

- Director, County of Hawaii, Department of Public Works
- Director, County of Hawaii, Planning Department

Private Organizations

- Kawaihae Boating Association
- Kawaihae Hawaiian Homes Community Association

Libraries

- Kailua-Kona Public Library, Kailua-Kona, Hawaii
- Hilo Public Library, Hilo, Hawaii
- Bond Memorial Library, Kapaau

Consultation during the EIS Preparation Process

The following agencies, organizations and individuals were consulted in the preparation of the Draft Environmental Impact Statement *and/or Final Environmental Impact Statement*.

Federal Agencies

- U.S. Department of the Interior, National Park Service
- U.S. Army Corps of Engineers
- U.S. Department of the Interior, Fish & Wildlife Service
- U.S. Department of Agriculture
- U.S. Department of the Treasury, Customs Service
- ***U.S. Environmental Protection Agency***
- ***U.S. Coast Guard***

State Agencies

- Department of Transportation
 - Harbors Division
 - Highways Division
 - Airports Division
- Department of Health
 - Environmental Planning Branch
 - Clean Air Branch
 - Clean Water Branch
 - Office of Environmental Quality Control
 - Wastewater Branch***
 - Solid and Hazardous Waste Branch***
- Department of Land and Natural Resources
 - Boating Division
 - Division of Aquatic Resources
 - Land Division
 - State Historic Preservation Office
- Department of Business, Economic Development & Tourism
 - Research and Economic Analysis Division
 - DBEDT Library

**Office of Planning
Land Use Commission**

- **Department of Hawaiian Home Lands**

County of Hawaii

- Planning Department
- Building Department
- Department of Public Works
 - Highways Maintenance
 - Engineering *Division*
 - Wastewater Division
 - Solid Waste Division
- Civil Defense
- Fire Department
- Department of Water Supply

Private and Community Organizations

- Matson
- Young Brothers
- Kawaihae Boating Association (Tim Tinker)
- Pua Kailima o Kawaihae (David Barclay)
- Bishop Museum (David Cowey)
- Akana Petroleum

Individuals

- John Moses
- John Keola Lake
- Pete Hendricks
- Momi Subiono
- *Liz DeRoche*
- *Josephine Keliipio*
- *Jesse Wolf*
- *Petitions signed by community members (see APPENDIX 1-B, Public Comment Period)*

7.2 2020 MASTER PLAN PUBLIC INVOLVEMENT PROCESS

7.2.1 User Group Organization

Harbors Division sought the input of harbor users and the public throughout the development of the Hawaii Commercial Harbors 2020 Master Plan. A total of 14 meetings of the two Hawaii Commercial Harbors 2020 Master Plan User Groups were conducted from May 22, 1997 to July 22, 1998.

- FIGURE [29] 40 is the organization chart for the User Group that shows how the group was divided into subgroups to focus on each harbor.

HAWAII COMMERCIAL HARBORS
2020 MASTER PLAN UPDATE

ORGANIZATIONAL CHART

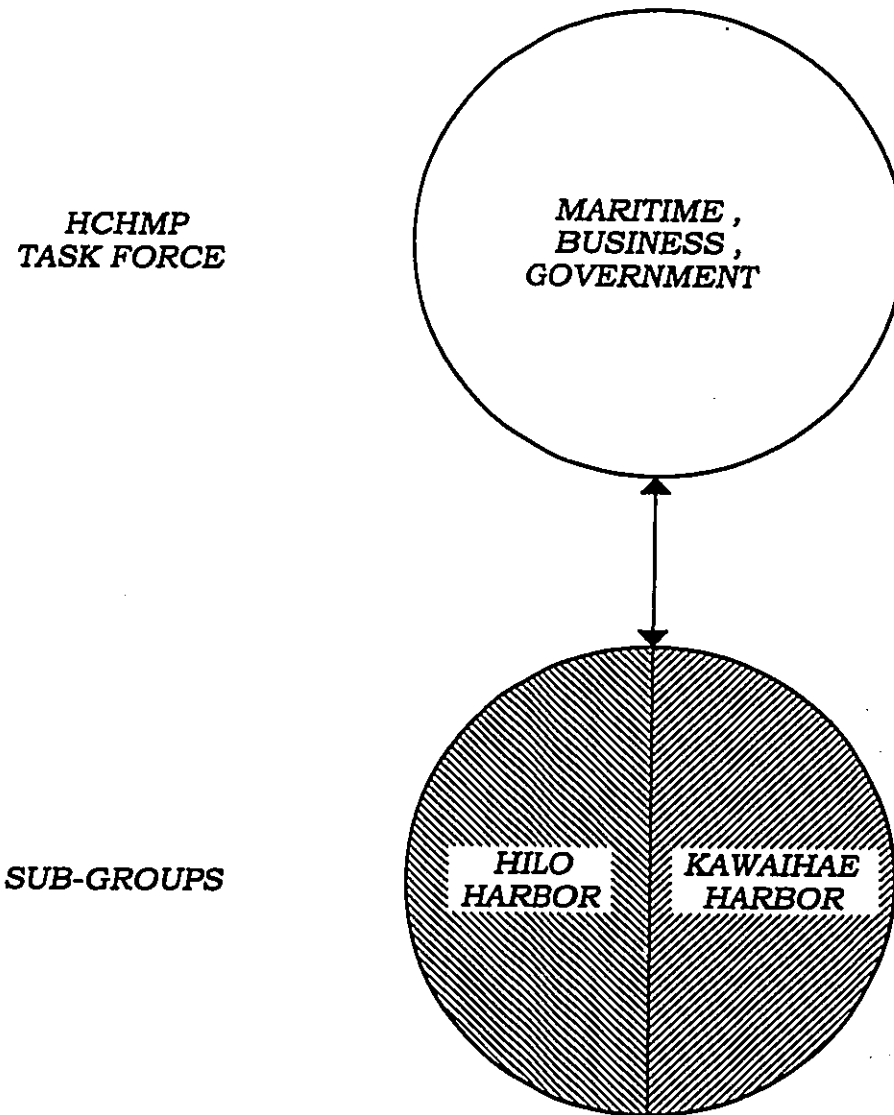


Figure [29] 40
Users Group Organization Chart
Source: DOT-Harbors Division, 1999

HAWAII COMMERCIAL HARBORS
2020 MASTER PLAN
FEIS

R.M. TOWILL CORPORATION

- FIGURE [30] 41 depicts the Task Flow Diagram showing the work flow that culminated in the publishing of the Hawaii Commercial Harbors 2020 Master Plan document by Harbors Division in August 1998.
- FIGURE [31] 42 shows the Governor's Approval document signed in August 1998 with the "unanimous" endorsement of representatives of the interisland cargo industry, bulk cargo industry, overseas container industry and passenger [cruise] ship industry.

User Group Participants

Federal Agencies

Department of the Army
 National Park Service
 U.S. Army Corps of Engineers
 U.S. Army Garrison-Hawaii
 U.S. Army, Pohakuloa Training Area, Island of Hawaii
 U.S. Customs Service
 U.S. Department of Agriculture
 [NCRS] *Natural Resources Conservation Service*

State Agencies

Department of Health, Office of Environmental Quality Control
 Department of Land and Natural Resources (Boating, Aquatic Resources, Land Division)
 Department of Business, Economic Development and Tourism (Land Use Commission)
 Department of Hawaiian Home Lands
 Department of Transportation (Statewide Transportation Planning, Harbors Division, Airports Division, Hawaii District Office, Highways Division)
 Office of Hawaiian Affairs
 Office of Planning
 University of Hawaii (Marine Center and College of Agriculture)

County of Hawaii

Planning Department
 Department of Public Works
 Department of Research and Development
 Civil Defense
 Fire Department

Private and Community Organizations and Elected Officials

All Ship and Cargo Surveys, Ltd.
 Akana Petroleum, Inc.
 American Hawaii Cruises
 Aquatic Perceptions/Banyan Adventure Company
 Clean Islands Council
 Coldwell Banker Properties
 Dillingham Construction Pacific

HAWAII COMMERCIAL HARBORS
2020 MASTER PLAN

TASK FLOW DIAGRAM

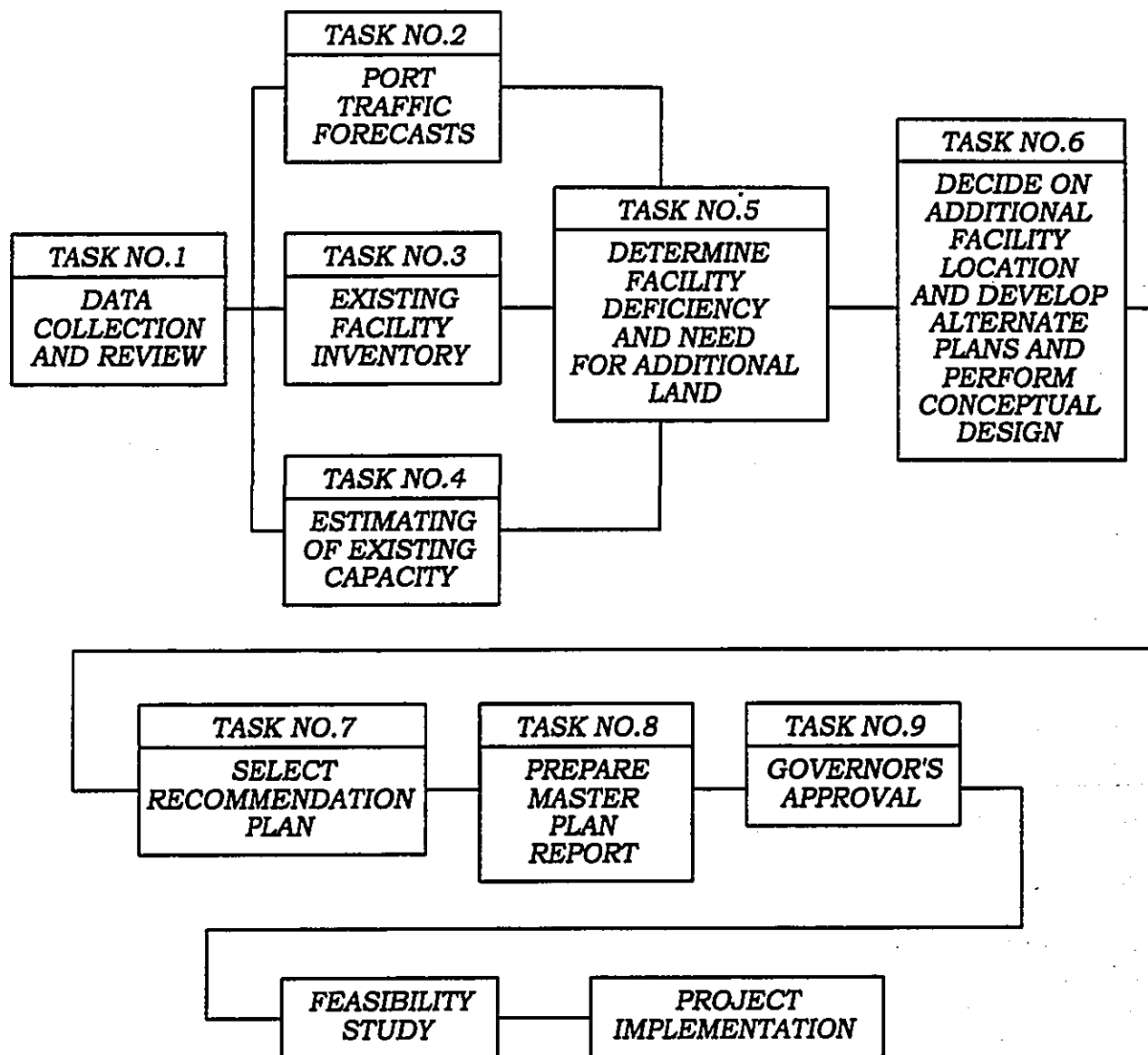


Figure [30] 41
Plan Preparation
Task Flow Diagram
Source: DOT-Harbors Division, 1999

HAWAII COMMERCIAL HARBORS
2020 MASTER PLAN
FEIS

R.M. TOWILL CORPORATION

FIGURE [31] 42

Governor and Industry Approval of the
Hawaii Commercial Harbors 2020 Master Plan

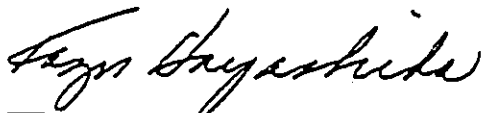
Source: Hawaii Commercial Harbors 2020 Master Plan, Harbors Division

TO: THE HONORABLE BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

FROM: KAZU HAYASHIDA 
DIRECTOR OF TRANSPORTATION

SUBJECT: HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN

The Hawaii Commercial Harbors 2020 Master Plan has been prepared as a long-range guide for the development of the island of Hawaii's commercial ports. This document updates the 2010 Master Plans for Hilo and Kawaihae Harbor. The planning task force, having jurisdictional concerns and having been duly consulted, recommends the attached plan for your approval.

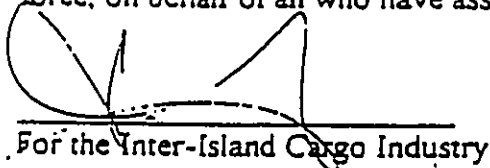
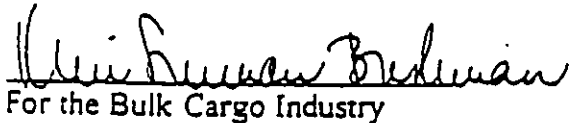


KAZU HAYASHIDA
Director of Transportation

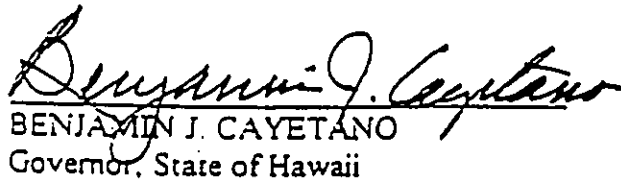
8/7/98

Date

The Hawaii Commercial Harbors 2020 Master Plan represents an involved, cooperative effort of private enterprise and government service. Many concerned business operators and harbor users, at one time or another, participated in every step of the plan's development. The planning task force, on behalf of all who have assisted, unanimously endorses this plan.


For the Inter-Island Cargo Industry
For the Overseas Container Industry
For the Bulk Cargo Industry
For the Passenger Ship Industry

APPROVED DISAPPROVED


BENJAMIN J. CAYETANO
Governor, State of Hawaii

Aug. 7, 1998
Date

Private and Community Organizations and Elected Officials (continued)

Hamakua Timber
HAVO (Hawaii Volcanoes)
Hawaii Island Chamber of Commerce
Hawaii Island Economic Development Board
Hawaiian Cement
Hawaiian Homesteader Waimea/Hawaiian Civic Club
HT&T (stevedore firm)
Kamehameha Schools
Kawaihae Boating Association
Kawaihae Hawaiian Homes Community Association
Kawaihae Cogen
Kona Kohala Chamber of Commerce
Kona Outdoor Circle
Kuwaye Trucking
Leo A. Daly
Matson Navigation Company
Mauna Kea [SWCD] *Soil and Water Conservation District*
Mauna Loa Diving Service
Nasaki & Associates
Norton Lilly Hawaii
Pua Kailima O'Kawaihae
SeaLand Service
Skinoustris
Suisan Company, Ltd.
The Gas Company
Tosco/76
Waimea Hawaiian Home Land Association
Waimea Hawaiian Homesteaders
Waldron Steamship Co., Ltd
Young Brothers
Young Brothers, Kawaihae

Individuals

Jonathan Cole
David Kamalani
Kaipo Kamalani
Wesley Wong
Roy Forbes
Allie Forbes

7.2.2 Hawaii Commercial Harbors 2020 Master Plan Public Process

TABLE 20 summarizes the User Group and Public Information Meetings conducted in 1997 and 1998 to collaboratively develop the proposed harbor improvements of the 2020 Master Plan.

TABLE 21
Summary of Proceedings
Meetings Conducted in Preparation of
Hawaii Commercial Harbors 2020 Master Plan

	Meeting Date	Purpose	Location	Discussion Points (paraphrased from minutes)
1	May 22, 1997	User Group	Hilo Airport, Hawaii	<ul style="list-style-type: none"> • Start-up meeting, including introductions and participant expectations • Agreement to treat both commercial harbors together • Review of organization chart and project workflow • Agreement on objective for the Hawaii Commercial Harbors 2020 Master Plan: "To enhance the lives and economy of the Island of Hawaii, the Hawaii Commercial Harbors 2020 Master Plan will be developed in open forums between public, private and community agencies as commercially viable, proficient, consensual, long-range development guide for both Hilo and Kawaihae harbors"

	Meeting Date	Purpose	Location	Discussion Points (paraphrased from minutes)
2	July 19, 1997	User Group	Hapuna Beach Prince Hotel, Hawaii	<ul style="list-style-type: none"> • Agreement on process goals for the User Groups. • Agreement on methodology and assumptions for forecasting of future cargo handling needs at the Harbors (compare historical cargo volumes to Gross State Product and apportion cargo tonnage between import vs. export, rate of containerization, mix of containers. • Agreement on assumption for "cargo split" between Hilo and Kawaihae (proportion of total Island of Hawaii cargo). • Plan individual sessions to deal with particular issues, e.g. containerized cargo, interisland cargo, petroleum and forest products • Overview of cruise ship industry.
3	July 24, 1997	User Group	Hilo Airport	<ul style="list-style-type: none"> • Future facilities requirements for containerized cargo, liquid bulk (fuel) and dry bulk (forestry products, cement, coal). • Agreement on assumptions to underlying cargo demand analysis.
4	August 27, 1997	User Group	Hapuna Beach Prince Hotel	<ul style="list-style-type: none"> • Agreement on assumptions for general cargo, containerization (75% containerization and 25% breakbulk) and mix of types of containers.
5	October 1, 1997	User Group	Hilo Airport	<ul style="list-style-type: none"> • Review of cruise ship industry outlook • Military requirements • Possible ferry service • Roadways
6	November 4, 1997	User Group	Keahole Kona International Airport	<ul style="list-style-type: none"> • Navigational needs • Pua Kailima o Kawaihae • Fishing policy • Buffer zone for Puukohola Heiau National Historic Site
7	December 10, 1997	User Group	Hilo Airport	<ul style="list-style-type: none"> • Brainstorming and evaluation of development alternatives for the two harbors.

	Meeting Date	Purpose	Location	Discussion Points (paraphrased from minutes)
8	January 28, 1998	User Group	Hilo Airport	<ul style="list-style-type: none"> Brainstorming and evaluation of development alternatives for the two harbors.
9	February 25, 1998	User Group	Keahole-Kona International Airport	<ul style="list-style-type: none"> Brainstorming and evaluation of development alternatives for the two harbors.
10	March 25, 1998	User Group	Mauna Kea Beach Hotel	<ul style="list-style-type: none"> Presentation by Akana Petroleum of Kawaihae Harbor on future plans for expansion at the harbor.
11	May 6, 1998	User Group	Hilo Airport	<ul style="list-style-type: none"> Presentation by Harbors Division on two alternative development schemes for Hilo Harbor and Kawaihae Harbor. Agreement to provide berthing for new research vessel in Hilo Harbor but not to relocate the entire research facility from Honolulu.
12	June 10, 1998	Public Information Meeting	State Office Building, Hilo	<ul style="list-style-type: none"> Presentation of 2020 Master Plans for Hilo Harbor and Kawaihae Harbor. Public comments from representatives of University of Hawaii at Hilo, Harbor Agent, American Hawaii Cruises, Aquatic Perceptions/Banyan Adventure Company, and Land Agent from State Department of Land and Natural Resources.
13	June 17, 1998	Public Information Meeting	Keahole-Kona International Airport	<ul style="list-style-type: none"> Public comments on outrigger canoe paddling in Kawaihae Harbor, access roads, siltation of Spencer Beach Park, Native Hawaiian community, cruise ships and fire safety.

CHAPTER 8 ALTERNATIVES CONSIDERED

8.1 OVERVIEW

The analysis of future harbor improvements included consideration of alternatives to address future facility needs. The alternatives evaluated were: 1) the no action alternative; 2) the delayed action alternative; 3) alternative development patterns; and 4) alternative locations.

8.2 NO ACTION ALTERNATIVE

State and Federal legislation require that a "no action" alternative be considered to serve as a baseline against which potential actions can be measured. The No Action Alternative was rejected in favor of the proposed 2020 Master Plan because economic consequences would result in the form of lost revenue opportunity and increased importation costs:

- As the Gross State Product increases in the future, cargo demand also will increase. With no action, the harbors' ability to handle projected increases in cargo demand will be inadequate.
- The cruise ship market involving Hilo Harbor will not develop as anticipated because of lack of berthing space and passenger amenities at the harbor.
- The diversified agriculture industry in east Hawaii and the coffee and flower industries in west Hawaii will have less capacity for export of their products through the harbors. This will constrain growth of these promising ventures and reduce the economic benefit to the Island of Hawaii.
- Goods will have to increasingly be brought into the Island of Hawaii by air because port facilities will be inadequate to accommodate the cargo demand in the harbors. This will greatly increase the expense of importation and cause rises in wholesale and consumer prices on the Island of Hawaii to rise.
- Harbors will be unable to take advantage of the efficiencies of new technology in cargo handling that will reduce cargo handling time and the associated cost.
- There will be no environmental or social impact as described in CHAPTER 3 and CHAPTER 4 *such as short-term construction impacts, greater threat of alien species introductions, increased risk of liquid bulk spills, increased traffic and reduced recreational opportunities along the coral stockpile shoreline of Kawaihae Harbor.*
- Shell collection by individuals [Momi Subiono] can continue in areas that would have been developed.

[8.3 DELAYED ACTION ALTERNATIVE]

[Under the delayed action alternative, the existing harbor facilities will not be adequate to handle projected increases in cargo and passenger vessel demand. Lack of capacity to bring in cargo to serve growing communities will result. Growing diversified agriculture industries, such as forest products on the Hamakua Coast, will lack capacity to ship their product to markets. Cruise ships will have to be turned away from Hilo Harbor, which will have a negative impact on the economy through lost export revenues. Cruise ship operators will respond negatively to their inability to make desired port calls which may restrict the growth of the Hawaii cruise ship industry.]

8.[4] 3 DEVELOPMENT ALTERNATIVES CONSIDERED

As described in CHAPTER 7, the Hawaii Commercial Harbors 2020 Master Plan was developed cooperatively between the Harbors Division and User Groups of maritime industry representatives, cargo carriers, commercial harbor users, recreational harbor users, government agencies and community groups. The User Group proceedings were focused on collaborative discussion of alternatives for future harbor development. Many ideas regarding future harbor development were discussed by the User Groups (CHAPTER 7). Alternatives considered but not recommended for inclusion in the Hawaii Commercial Harbors 2020 Master Plan are described below in sections 8.[4]3.1 and 8.[4]3.2.

8.[4]3.1 Hilo Harbor Development Alternatives Considered but Excluded from 2020 Plan

TABLE 22 shows Hilo Harbor development alternatives that were considered by the User Groups but excluded. The table summarizes the rationale for exclusion of these development alternatives.

TABLE 22
HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN
HILO HARBOR DEVELOPMENT ALTERNATIVES
CONSIDERED BUT EXCLUDED

Hilo Harbor Development Alternative	Rationale for Exclusion from 2020 Plan
Installation of crane rails	It is not Harbors Division's function to provide stevedoring equipment such as crane rails. Further, no private entity has come forward to provide this equipment. Finally, Harbors Division does not anticipate sufficient demand for crane rails to justify the expense.
Shift interisland operations to Pier 1	This was suggested to provide additional shed space for interisland operations at Hilo Harbor. It would be unnecessary under the plan for proposed Pier 4 which would be targeted for interisland operations, including new shed space.
[Consolidation of cement storage and operations at Kawaihae Harbor]	[Hawaiian Cement is a Harbors Division tenant at both Hilo Harbor and Kawaihae Harbor. This firm has considered several options but currently has no plans to consolidate its operations at Kawaihae Harbor.]
Lengthen Pier 1	This is not feasible without eliminating the entrance to Radio Bay. Several years ago Pier 1 was lengthened with a stub extension.
Transfer jurisdiction for Kalaniana'ole Street from County of Hawaii to State of Hawaii	This transfer would be under the jurisdiction of the State Department of Transportation, Highways Division.

Hilo Harbor Development Alternative	Rationale for Exclusion from 2020 Plan
Construct new road parallel to Kanoelehua Avenue dedicated to freight movements	This would be under the jurisdiction of the State of Hawaii, Highways Division. Harbors Division is of the opinion that traffic does not justify this action. (The traffic analysis performed for this EIS supports this, by stating that widening of Kalanianole Street would provide an adequate level of service without constructing a new road parallel to Kanoelehua <i>Avenue</i> (Julian Ng, Incorporated, 2000))
Fish processing plant	The User Group and Harbors Division agreed that there is currently insufficient demand for this, due to low levels of fishing vessel traffic in Hilo Harbor.
Fill in Radio Bay	Although this would increase the area for container operations, it would preclude use of the harbor for berthing of Coast Guard vessels, pilot boat and other frequent transient vessels. According to the Harbormaster, Hilo Harbor has accommodated as many as 28 transient yachts at one time in Radio Bay. Harbors Division would like to retain this capacity within Hilo Harbor.

8.[4]3.2 Kawaihae Harbor Development Alternatives Considered but Excluded from 2020 Master Plan

TABLE 23 shows Hilo Harbor development alternatives that were considered by the Hawaii Commercial Harbors 2020 Master Plan User Groups but excluded. The table summarizes the rationale for exclusion of these development alternatives.

TABLE 23
HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN
KAWAIHAE HARBOR DEVELOPMENT ALTERNATIVES
CONSIDERED BUT EXCLUDED

Kawaihae Harbor Development Alternative	Rationale for Exclusion from 2020 Plan
Installation of crane rails	It is not Harbors Division's function to provide stevedoring equipment such as crane rails. Further, no private entity has come forward to provide this equipment. Finally, Harbors Division does not anticipate sufficient demand for crane rails to justify the expense.
Cold storage facilities for agricultural products	Harbors Division informed the Users Group if private firms such as Waimea flower growers wanted to use cold storage at Kawaihae Harbor, refrigeration is currently available.
Bunkering	Bunkering is refueling of ships. There is currently no current or anticipated demand for this function at the subject harbors. If demand increases, Harbors Division anticipates that a private entity would request to provide the service.
Bulk fiber storage	This was excluded for lack of demand for this capacity at Kawaihae Harbor.
Space for wood chip mill, veneer plant, wood processing and storage facility	There was little support for this alternative due to concerns about impacts of noise, odor and air quality.
Intra/Interisland ferry terminal at Young Brothers current terminal site	Ferry service to West Hawaii would be more likely to terminate in Kailua-Kona because that is the largest population center in west Hawaii. In addition, demand for ferry service to west Hawaii appears insufficient at this time or in the foreseeable future.

Kawaihae Harbor Development Alternative	Rationale for Exclusion from 2020 Plan
Two additional acres of military land to accommodate staging operations	Because Harbors Division allows the U.S. Army to perform staging operations on commercial harbor land, this was considered unnecessary.
U.S. Coast Guard pier at LST landing	This is under the jurisdiction of the U.S. Coast Guard (USCG). Historically, USCG has preferred to locate their base operations for the Island of Hawaii at Hilo Harbor.
[Attenuate harbor surge by extending the breakwater and constructing a groin toward the buoy]	[This is under the jurisdiction of the U.S. Army Corps of Engineers.]
[Construct new breakwater outside existing breakwater]	[This is under the jurisdiction of the U.S. Army Corps of Engineers.]
Increase size of turning basin	This is under the jurisdiction of the U.S. Army Corps of Engineers.

8.[5] 4 ALTERNATIVE LOCATIONS

This alternative would require the construction of alternate harbor facilities on the Island of Hawaii and was not seriously considered. No other sites on the island would provide an economical, feasible alternative location for the proposed actions. Although small boat harbors exist on the Island of Hawaii, none has conditions or infrastructure that would provide for commercial cargo handling or cruise ships. Further, each existing commercial harbor site was carefully selected to offer the most advantageous conditions for harbor location on its respective coast of the Island of Hawaii.

CHAPTER 9 RELATIONSHIP BETWEEN SHORT-TERM USES AND MAINTENANCE OF LONG-TERM PRODUCTIVITY

No short-term exploitation of resources have been identified that will have negative long-term consequences. The proposed projects, which are necessary to meet increased demand for cargo handling and cruise ship berthing, will be implemented over a twenty-year period. The 2020 Master Plan is a logical extension of current facilities that was conceived and supported by a consortium of government and community leaders as well as harbor users. The improvements will be designed and constructed to last for decades.

The principal long-term benefits of the 2020 Master Plan are:

- The ability to provide adequate infrastructure for needed cargo operations and cruise ship passengers;
- Continued productive use of the property with greater efficiencies than now experienced; and
- The provision of essential infrastructure through industrial and commercial facilities that will better serve the residents of the Island of Hawaii.

Development of the harbors is not expected to pose any long-term or short-term risks to health and safety. Harbors Division will follow Best Management Practices in implementing all improvements and mitigation measures. Access roads to both harbors will be improved to provide acceptable future traffic conditions. The project at Hilo Harbor will improve access to the shoreline along the current Baker's Beach, which is currently used only by fewer than 20 residential lots with a total population of 30-40 people and currently accessed through a road paved with only coral. The development in this area of the harbor will also improve access to the "heiau" site east of the proposed Hilo Harbor eastern boundary. This area is currently reached only through residential property.

Proposed Piers 4, 5 and 6 at Hilo Harbor will replace the man-made shoreline in the Baker's Beach area. The jagged shoreline of the coral stockpile at Kawaihae Harbor will be made regular by the construction of piers.

As discussed throughout Chapter 3, specific measures to mitigate potential adverse environmental impacts will be implemented by Harbors Division in the design, construction and operations phases of the proposed harbor improvements. No long-term losses of resources are anticipated. Significant archaeological sites are not present at either harbor location and will therefore not be an issue.

Foregoing or delaying harbor improvements would mean less than optimum use of the facilities and would result in lower levels of cargo and passenger service and convenience.

CHAPTER 10
ANY IRREVERSIBLE AND IRRETRIEVABLE
COMMITMENTS OF RESOURCES

Implementation of the 2020 Master Plan and its associated construction of facilities will result in the irreversible and irretrievable commitment of certain natural and fiscal resources. Major resource commitments include: 1) the land on which the various improvements will be located; 2) use of public funds; 3) construction materials; 4) manpower; 5) increased fuel consumption; 6) water; 7) energy; 8) the use of State-owned leased lands near Hilo Harbor; and 9) use of the de facto recreational area at Kawaihae Harbor to allow expanded commercial harbor development. These commitments must be weighed against the projected benefits which will be derived from the projects, the consequences of taking no action, or implementing other less beneficial uses of the project site.

[A significant portion of both harbor properties will remain as open space, albeit with harbor operations.] At each harbor, the undeveloped shoreline areas would be irretrievably changed in shape and character. The coralline shoreline of Baker's Beach and the current dwellings on State-owned leased land would be replaced by piers. At Kawaihae Harbor, recreational uses of the area proposed for Piers 3, 4 and 5 would be curtailed in the short-term during construction and eliminated in the long-term, with the exception of fishing off the piers. *At Hilo Harbor, recreational fishing opportunities will increase with the addition of new piers.*

The commitment of resources required to accomplish the proposed improvements includes building materials [and labor] which are irretrievable. Construction of improvements and use of commercial cargo and passenger vessels would require the consumption of petroleum products and petroleum-based electrical generation.

CHAPTER 11 GLOSSARY

BALANID: *A term referring to a family of acorn barnacles, i.e. Family Balanida.*

BASIN, TURNING: An area of water or enlargement of a channel that is used for turning vessels around.

BERTH: The water area, at the waterfront edge of a wharf, reserved for a vessel, including the wharf accessories such as bollards.

BOLLARD: A thick, low post of steel mounted on a wharf, to which mooring lines from vessels are attached.

BOW: The front of a vessel.

BREAK-BULK CARGO: General cargo conventionally stevedored and stowed as opposed to bulk, unitized or containerized cargo.

BREAKWATER: An engineering structure to afford shelter from wave action; may also be called a jetty or revetment.

BULK CARGO: Cargo stowed without benefit of package or container. Bulk cargo is shipped loose, as in grains or liquid.

BULK CONTAINER: Containers of various lengths designed for carriage of liquid or dry commodities in bulk. See Container Types below.

BUNKERING: Refueling of ships.

CHANNEL: A deeper part of the entrance to a harbor, usually dredged to a certain depth for safety of vessels.

CONTAINER: A single rigid, non-disposable cargo box and as the case may be: ventilated, insulated, reefer, flat rack, vehicle rack or open top container with/without wheels or bogies attached not less than 20 feet in length, having a closure or permanently-hinged door, that allow ready access to cargo. All types of containers will have construction, fittings and fastenings able

to withstand, without permanent distortion, all the stresses that may be applied in normal service use of continuous transportation.

CONTAINER EQUIVALENTS (FEU/TEU): Forty-foot equivalents; twenty-foot equivalents. The internationally recognized standard conversion basis for counting containers in a lot (only as number and not as weight) comparable with other lots.

CONTAINER YARD (C.Y.): The location at all container terminals designated, by carrier, in the port.

CONTAINER (TYPES): The basic container is a closed metal or reinforced box with fixtures for stacking, lifting and handling, and attachment to truck beds. Variations include: refrigerated units (reefers), and special types for the transportation of bulk cargo, automotive equipment, livestock, liquids, etc. Cargo carried by containers can include practically everything but the following: dry or liquid bulk products which are shipped in large quantities, such as coal, ore or petroleum; or commodities that cannot generally be containerized economically because of their nature, size and weight.

CONTAINERIZED CARGO: Cargo that can fit into a container physically, conveniently, and economically.

CRANE: A machine for hoisting weights or cargo moving them vertically/horizontally for limited distances and lowering them to new locations.

CRANE, CARGO: A crane especially adapted to the transferring of cargo between a vessel's hold and a wharf or lighter.

CRANE, GANTRY: A crane or hoisting machine mounted on a frame or structure spanning an intervening space.

DOLPHIN: An isolated cluster of piles used as a support of mooring devices or marker lights.

DRAFT: The depth of a vessel below the waterline, measured to the lowest point of the hull, the bottom of the propeller, or other reference point.

DREDGE: 1) To excavate material from the bottom of a body of water. 2) A machine for excavating material from the bottom of a body of water classified by types of excavating equipment used thereon, as bucket dredges, dipper, hopper, hydraulic.

DREDGING SPOILS OR DREDGING MATERIALS: Byproduct of dredging process; the residual accumulated silt that must be disposed of.

DRY BULK: Non-liquid cargo stowed without benefit of package or container, i.e., shipped loose, as in grains or cement powder.

DRY BULK TERMINAL: An area used for stowage, loading and offloading of dry bulk.

GENERAL CARGO: *Miscellaneous cargo of varying quantities and sizes which are organized at the terminal for subsequent shipment to a common port or regional destination.*

HARBOR: An area of water affording a natural or artificial haven for ships. In a proper and more limited sense, an area separated by natural or artificial indentations of shore line from the main body of water, as the area within two headlines or points between which run the main ship channels leading to an open sea.

JETTY: An engineering structure at the mouth of a harbor to control the water flow and currents, to maintain depth of the channel and protect harbor or beach.

LIQUID BULK: Cargo stowed without benefit of package or container, i.e., shipped loose, as in petroleum or oil.

LIQUID BULK TERMINAL: An area where liquid bulk cargo is loaded on and off ships, stored, and dispensed. Liquid bulk can be stored in above-ground or underground tanks.

MARSHALLING: Organizing of cargo.

MOORING: A place at which or an object to which a vessel can be moored, or "made fast."

PIER: The location in a seaport at which cargo arrives or departs. A dock for loading or unloading ships or vessels. A type of wharf; running at an angle with the shore line of the body of water. See "Wharf."

REEFER: Refrigerated container.

REVETMENT: A facing for protecting a jetty.

ROLL-ON/ROLLOFF (RO/RO): Cargo which is rolled or driven on and off vessels through bow or stern ramps on side cargo doors.

SHIP: A large oceangoing vessel propelled by engines.

STERN: The back or rear of a vessel.

STEVEDORE, STEVEDORING: A person or company engaged in loading and unloading ships. Stevedoring: loading and unloading of ships by stevedores.

STOWAGE: Storage.

TEU: Twenty-foot-equivalent unit. The common unit used in indicating the capacity of a container vessel or terminal. A 40-foot container is equal to two TEUs.

TERMINAL: 1) A berthside area where cargo is loaded to and discharged from vessels. 2) A depot - usually inland where containers are brought for unloading.

TRANSSHIPMENT: To transfer from one ship, truck or other conveyance to another.

TURN-AROUND TIME: The period during which a transport vehicle is confined to port, terminal or warehouse, loading or unloading.

UNITIZED CARGO: Cargo arranged in units.

VESSEL: A craft for traveling on water.

WHARF: A structure on the shore of or projecting into a harbor so that vessels may be moored alongside to load or unload or lie at rest.

CHAPTER 12 ACRONYM LIST

AAPA	American Association of Port Authorities
AAQS	Ambient Air Quality Standards
ADA	Americans with Disabilities Act
AECOS	The consulting firm which performed the "Review of Water Quality and Biology in Kawaihae and Hilo Harbors for the Harbors 2020 Master Plan Implementation EIS" (Appendix E)
BMP	Best Management Practices
BMPP	Best Management Practices Plan
C	Celsius
C&D	Construction and demolition, a type of "waste" material
CFR	Code of Federal Regulations
CO	Carbon monoxide
CZM	Coastal Zone Management, referring to the Coastal Zone Management Act of 1972 (P.L. 92-583), and Chapter 205A by the same name
DAR	State of Hawaii, Department of Land and Natural Resources, Division of Aquatic Resources
Db	Decibels (measurement of sound)
DbA	A-weighted decibel, corresponding to human hearing range
DBEDT	Department of Business and Economic Development and Tourism, State of Hawaii

DEIS	Draft Environmental Impact Statement
DLNR	Department of Land and Natural Resources, State of Hawaii
DNL	Day-Night Average Sound Level (also known as Ldn)
DO	Dissolved oxygen
DOH	Department of Health, State of Hawaii
DOT	Department of Transportation, State of Hawaii (ALSO SDOT)
EIS	Environmental Impact Statement
EPA	See "USEPA"
FHA	Federal Housing Administration
FEIS	Final Environmental Impact Statement
FT	Foot or feet
HAR	Hawaii Administrative Rules
HAVO	Hawaii Volcanoes Observatory
HOISN	Hawaii Ocean Industry and Shipping News (publication)
[HPD]	[Historic Preservation Division] <i>See SHPD</i>
HT&T	Stevedore firm providing services to Hilo Harbor
HUD	U.S. Department of Housing and Urban Development
IMO	International Maritime Organization
ISTEA	Intermodal Surface and Transportation Efficiency Act of 1991
LST/LSV	Landing Ship Tank/Landing Ship Vehicle

LOS	Level of Service (traffic engineering term)
M	Meters
MG-1A	Zoning code for County of Hawaii pertaining to General Industrial lands, with 1,000 square feet of land area required per building site
MGD	Millions of gallons per day
MLLW	Mean Lower Low Water – level of water susceptible to flooding
MPRSA	Marine Protection, Research and Sanctuaries Act (33 U.S.C. 1413)
NAGPRA	Native American Graves Protection and Repatriation Act (NAGPRA)
NCDC	National Climatic Data Center
NRCS	National Resource Conservation Service
NMFS	National Marine Fisheries Service, U.S. Department of the Interior
NPDES	National Pollution Discharge System, Section 402, Clean Water Act
NPS	National Park Service, U.S. Department of the Interior
NRC	National Research Council
ODMDS	Ocean Dredged Material Disposal Sites
OEQC	Office of Environmental Quality Control, Department of Health, State of Hawaii
ORCA	Ocean Research Consulting and Analysis
PCBs	Containing "polychlorinated biphenyls"
pH	Measure of acidity
PM ₁₀	Measurement of particulate matter in the air

PPV	Peak particle velocity – measurement of ground vibrations
RM-1.5	Zoning code for County of Hawaii pertaining to Multi-Family Residential Districts, with 150 feet square feet of land area required per dwelling
RO/RO	Roll on/Roll off harbor facilities (see GLOSSARY OF TERMS for definition)
SDOT	State of Hawaii, Department of Transportation
SEDF	Scaled energy distance factor
SHP[O]D	State Historic Preservation [Office] <i>Division</i> , Department of Land and Natural Resources, State of Hawaii
SS	“Steamship” – precedes the name of a ship, e.g. SS Constitution
USA	United States Army
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USCS	United States Customs Service, Department of the Treasury
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service, Department of the Interior
UST	Underground Storage Tank
VA	Federal Veteran’s Administration
WQC	Water Quality Certification, Section 401, Clean Water Act
YMCA	Young Men’s Christian Association

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CHAPTER 14
LIST OF PREPARERS

<u>Preparer</u>	<u>Project Role</u>
R.M. Towill Corporation Chester T. Koga, AICP Gail W. Atwater, AICP David Gerow	Project Manager for EIS Preparation EIS Preparer; Oral History Environmental Site Assessments
Julian Ng, Incorporated Julian Ng, P.E.	Traffic Impact Analysis
Char & Associates, Inc. Winona P. Char	Botanical Surveys
AECOS, Inc. S. A. Cattell S. Coles E. Guinther	Marine Biology and Water Quality Analyses
Haun & Associates Alan Haun, Ph.D	Archaeological Inventory Survey, Hilo Harbor

CHAPTER 15 UNRESOLVED ISSUES

The year-long master planning process with harbor User Groups and EIS consultation process yielded substantial input from harbor users, government agencies, businesses, private interest groups and individuals. Comments were received for on the EISPN and the DEIS (see Appendix A) which provided input on issues and concerns relative to the proposed action.

The issues raised during the consultation program have been resolved in this FEIS, with the exception of the transfer of the Baker's Beach lease lots from the Department of Land and Resources to enable construction of the passenger terminal at proposed Piers 5 and 6.

The Department of Transportation, Harbors Division is aware that additional concerns regarding the proposed development may arise in the future. Therefore, Harbors Division will continue to work with harbor users, government agencies, private interest groups and the public so that project plans meet project objectives and take into consideration the concerns of agencies and the public.

CHAPTER 16

ADVERSE IMPACTS THAT CANNOT BE AVOIDED

Adverse impacts that cannot be avoided during the construction period at both harbors will include increased noise; construction-related traffic; degraded water quality during dredging; generation of construction and demolition waste; and vibration from pile driving.

Adverse impacts that cannot be avoided following construction at both harbors will include greater exposure to the introduction of alien species borne by foreign and domestic vessels; alteration of the shoreline; and increase in ambient noise levels.

In addition:

- *Hilo Harbor's passenger terminal will generate increased noise for residences on Keaa Street and Bay Clinic. State-owned, leased property currently in residential use will be converted to commercial harbor use.*
- *Kawaihae Harbor will have increased potential for fuel spills; decreased area for public recreation; increased exposure to turbidity for areas with coral; and removal of private boat moorings currently in the commercial harbor.*

Appendix [A] A-1

EISPN COMMENT LETTERS AND RESPONSES



United States Department of the Interior

NATIONAL PARK SERVICE
Pacific Island System Support Office
390 Ala Moana Blvd., Box 50165
Room 6305
Honolulu, Hawaii 96810

REPLY TO:

L7617(PUIIO)

November 17, 2000

Chester T. Koga
R.M. Towill Corporation
420 Waiakamilo Road
Honolulu, Hawaii 96817-4941

Dear Mr. Koga:

We have reviewed the Environmental Impact Statement (EIS) Preparation Notice for the Hawaii Commercial Harbors 2020 Master Plan, Island of Hawaii. Our comments are related to the adverse effects which proposed harbor related improvements would have on the State-owned Pelekane area of Pu'ukohola Heiau National Historic Site. Pelekane is an area of major importance in Hawaiian history and contains the remains of several archeological sites.

Pelekane is known to be the site of an ancient royal Hawaiian compound, consisting of a royal residence and housing for Big Island ruling chiefs. Several prominent figures in Hawaiian history are associated with Pelekane, including Kamehameha I, Kamehameha II and Queen Emma. Major portions of the Pelekane area are being proposed for the construction of a cargo expansion area and liquid bulk terminals. These developments have great potential to not only adversely affect Hawaiian archeology, but also the historical integrity of the entire Pelekane area.

During the preparation of the EIS, we suggest you contact Daniel Kawaiaca, Superintendent of Pu'ukohola Heiau National Historic Site for additional information. The park's address is P.O. Box 44340, Kawaihae 96743 and the phone number is (808) 882 7218.

Sincerely,

Bryan Hahry
Superintendent

cc:
Daniel Kawaiaca, PUIII

BENJAMIN J. CAVETANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5087

January 26, 2001

ERIK K. SHIMAZU
DIRECTOR
DEPUTY DIRECTORS
GLENN J. OKAMOTO
JUDITH Y. BRASGARD

BY TELETYPE TO:

Mr. Brian Harry
Page 2
January 26, 2001

HAR-EP
1608.01

expressed concerns about the potential noise and visual impacts that the proposed liquid bulk terminal might have on the Puukohola Heiau National Historic Site. The DEIS will include discussions of how any noise or visual impacts will be avoided or minimized as well as any mitigation measures that will be necessary.

We appreciate the assistance the National Park Service has provided on this matter. If you have any questions or require additional information, please call Mr. Glenn Soma, Harbors Division Planner, at 587-2503.

Very truly yours,

Thomas T. Fujikawa
Harbors Administrator

Attachment: Cooperative Agreement No. H-98-8
Figure: 2020 Master Plan Improvements, Kawaihae Harbor

c: Daniel Kawaisca, Superintendent
Puukohola National Historic Site

cc: HAR-E, -H

GADW:sd

HAR-EP
1608.01

Mr. Bryan Harry, Superintendent
U. S. Department of Interior, National Park Service
Pacific Island System Support Office
300 Ala Moana Boulevard, Box 50165
Honolulu, Hawaii 96850

Dear Mr. Harry:

Subject: Environmental Impact Statement Preparation Notice (EISP/N) for the Hawaii
Commercial Harbors 2020 Master Plan, Island of Hawaii

Thank you for your letter dated November 17, 2000 which was addressed to our consultant,
R. M. Towill Corporation, providing comment on the above referenced EISP/N.

Your letter expressed concern about the adverse effects of the proposed harbor improvements
would have on the Pelekane lands. The Pelekane lands (as provided by Cooperative Agreement
No. H-98-8 between the National Park Service and the State Department of Transportation,
Harbors Division, attached) provides a state-owned buffer zone that separates the
archaeologically significant Puukohola Heiau National Historic Site from the commercial harbor
area. As stated in the *Hawaii Commercial Harbors 2020 Master Plan*, the Harbors Division
intends to preserve all lands as provided by the above-referenced agreement as a buffer zone. The
proposed liquid bulk terminal will be adjacent to the Pelekane lands. The Draft Environmental
Impact Statement (DEIS) will include a map of proposed improvements that shows the agreed-
upon buffer zone (attached). Further, the DEIS will cover any potential impacts that the
proposed improvements will have on nearby archaeological resources.

As suggested in your letter, we have contacted your staff member, Mr. Daniel Kawaisca,
Superintendent of the Puukohola Heiau National Historic Site. During our conversation, the





STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
889 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5087

December 10, 1999

Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii 96813

KAZU HAYASHIDA
DIRECTOR

DEPUTY DIRECTORS
OLENI M. OKUNAKI
BRUCE L. MANUAI

IN REPLY REFER TO

REMARKS:

The United States Department of the Interior, National Park Service (NPS), is requesting a five (5) year extension on the subject cooperative agreement. The NPS utilizes the property solely to conduct educational workshops in conjunction with the Pu'ukohola Heiau National Historic Site, and will not use the property for any other purpose without the prior written consent of the State. The Land Board originally approved the original agreement at its meeting of March 23, 1989 under agenda Item J-6 for a term from January 1, 1990 to December 31, 1994. At its meeting of November 18, 1994 under agenda Item K-6, the Land Board authorized the extension of the subject cooperative agreement from January 1, 1995 to December 31, 1999.

RECOMMENDATION:

That the Board consent to the five (5) year extension of Cooperative Agreement No. H-89-8 issued to the United States Department of the Interior, National Park Service in accordance with the terms and conditions outlined above and such terms and conditions as may be prescribed by the Director of Transportation.

Respectfully submitted,

Kazu Hayashida

KAZU HAYASHIDA
DIRECTOR OF TRANSPORTATION

HAWAII

FIVE YEAR EXTENSION OF COOPERATIVE AGREEMENT
NO. H-89-9 ISSUED TO THE UNITED STATES DEPARTMENT OF
THE INTERIOR AT KAWAIIHAE, KOHALA, HAWAII

STATUTE: Sections 171-95, Hawaii Revised Statutes

APPLICANT: THE UNITED STATES DEPARTMENT OF THE INTERIOR,
NATIONAL PARK SERVICE (NPS)

AREA: Approximately 22 acres

LOCATION: Kawaihae Harbor, South Kohala, Hawaii
Tax Map Key No. 3rd/6-1-03:25 (Portion)
Governor's Executive Order: 1988

PURPOSE: Non-exclusive use to promote educational and interpretive programs
related to the Pu'ukohola Heiau National Historic Site.

RENTAL: Gratis

TERM OF LEASE
EXTENSION: January 1, 2000 to December 31, 2004

Attachment

APPROVED FOR SUBMITTAL:

Timothy E. Johns

TIMOTHY E. JOHNS
CHAIRPERSON AND MEMBER

Approved by the Board
at its meeting held on

[Signature]

ITEM K-2

PHONE (808) 594-1888

FAX (808) 594-1885



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPOLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

November 29, 2000

Mr. Chester T. Koga, AICP
R.M. Towill Corporation
420 Waiakamilo Road
Honolulu, HI 96817-4941

Subject: Environmental Impact Statement Preparation Notice (EISPN)
For the Hawaii Commercial Harbors 2020 Master Plan
Island of Hawaii, State of Hawaii

Dear Mr. Koga:

Thank you for the opportunity to comment on the above referenced project. According to the EISPN, the Hawaii Commercial Harbors 2020 Master Plan is a conceptual-level land use plan addressing future development of the Island of Hawaii's interdependent commercial harbors at Hilo and Kawaihae. The Office of Hawaiian Affairs offers the following comments:

Act 50, Session Laws of Hawaii (SLH) – Regular Session of 2000

The purpose of Act 50, SLH 2000, is to:

- 1) "Require that environmental impact statements include the disclosure of the effects of a proposed action on the cultural practices of the community and State;
- 2) Amend the definition of "significant effect" to include adverse effects on cultural practices."

OHA requests that the DEIS identify and address the effects on Native Hawaiian culture and traditional and customary rights pursuant to Section 343-2, Hawaii Revised Statutes, as amended.

Mr. Chester T. Koga, AICP
R.M. Towill Corporation
November 29, 2000
Page Two

The cultural assessment should include consultations with individuals and/or organizations with expertise and knowledge of the Hilo and Kawaihae areas. These consultations should encompass the types of cultural resources, practices and beliefs found within the district or ahupua'a of the proposed project areas.

We anticipate the Draft Environmental Impact Statement for our further review and comment. If you have any questions, please contact Mark A. Mararagan, policy analyst at 594-1945, or e-mail him at mmarragan@oha.org.

Sincerely,

Colin C. Kippen, Jr.
Deputy Administrator

cc: OHA Board of Trustees
Hilo CAC
Kona CAC

BENJAMIN J. CAYetano
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
859 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5087

January 30, 2001

GRANIK IMAI
DIRECTOR
DEPUTY DIRECTORS
GLENN Y. OKAMOTO
JANEY Y. URUSAKI

IN REPLY REFER TO:

HAR-EP
1637.01

HAR-EP
1637.01

Colin C. Kippen, Jr.
Page 2
January 30, 2001

extensive oral histories with long-time Kawaihae residents were taken in preparation of the Cultural Survey Hawaii's report *Archaeological Survey and Testing, Kawaihae, South Kohala, Hawaii*. Informants included Akau, Masaru Doi, and Eddie La'au, Jr. Further, David Kawaiata, Superintendent of the Puukohola Heiau National Historic Site, provided names of additional resources that are familiar with cultural practices in the vicinity of Kawaihae Harbor. All of these will be included in the DEIS.

We look forward to your review of the DEIS. If you have any questions or require additional information, please contact Glenn Soma, Harbors Division Planner, at 587-2503.

c: R. M. Towill Corporation

bc: HAR-E, HAR-H

GAJDW:lm

TO: COLIN C. KIPPEN, JR., DEPUTY ADMINISTRATOR
OFFICE OF HAWAIIAN AFFAIRS

FROM: THOMAS T. FUJIKAWA
HARBORS ADMINISTRATOR *Thomas T. Fujikawa*

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
(EISPN) FOR THE HAWAII COMMERCIAL HARBORS 2020 MASTER
PLAN, ISLAND OF HAWAII

Thank you for your letter dated November 29, 2000, which was addressed to our consultant, R. M. Towill Corporation, regarding the above-referenced EISPN.

With regard to the requirement to provide a cultural impacts assessment as mandated by Act 50, Session Laws of Hawaii 2000, the DEIS will include a section entitled ARCHAEOLOGICAL, HISTORICAL AND CULTURAL RESOURCES in which traditional cultural practices will be addressed for each harbor. This will include an overview of the cultural history of the pertinent ahupua'a as well as summaries of interviews conducted with informants familiar with cultural practices in the ahupua'a associated with each harbor.

Specifically for Hilo Harbor, we commissioned the *Archaeological Inventory Survey, Hilo Harbor Expansion* by Haun & Associates during the DEIS preparation. This document presents the historical and cultural background of the Waikae region of the Island of Hawaii as well as findings and recommendations. We supplemented information about cultural practices in the Hilo area with an extensive oral history interview with John Moses, a native Hawaiian and 44-year Hilo Harbor employee.

Kawaihae Harbor is located on dredged coral fill and is therefore a highly disturbed area with no archaeological sites. However, Kawaihae Harbor is near significant archaeological resources. The neighboring Pelekane lands form a buffer between the harbor and the Puukohola Heiau National Historic Site. Under the 2020 Master Plan, this buffer is retained. In addition,





STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

LAND DIVISION
PO BOX 451
HONOLULU HAWAII 96809

December 6, 2000

I.D./NAV

R. M. Towill Corporation
Mr. Chester Koga, AICP
420 Waikamilo Road
Honolulu, Hawaii 96817-4941

Dear Mr. Koga:

SUBJECT: Review Environmental Notice for Hawaii Commercial Harbor 2020 Master Plan

Ref.: 2020RMP.RCH

Thank you for the opportunity to review the subject matter. The following is our Hawaii District Land Office comments:

1. The development and construction of the new pier in Hilo Harbor needs to take into consideration a 50-foot abandoned right-of-way that parallels the existing road servicing the leasehold home-sites referred to on Page 29. Is the Roadway right-of-way going to be incorporated into the lands for the Harbor?
2. There has been some discussion about the use of the railroad right-of-way as a pedestrian route to the Banyan Drive resort area. If so, the master plan should address the possibility and the need to design a transition from the passenger terminal to the pedestrian walkway.
3. The existing roadway along the leasehold home-sites is maintained and owned by the County of Hawaii. Any intent to incorporate this right-of-way area into the harbor will require a quitclaim deed from the County of Hawaii to the State of Hawaii for set aside to DOT.
4. The road right-of-way from the existing Kesa Street is a government right-of-way owned by the County of Hawaii. Again, if it is the intent to develop this as an access to the harbor, the County of Hawaii would need to quitclaim the right-of-way to the State for set aside to the DOT.

The department has no other comment to offer at this time.

Should you have any questions, please feel free to contact Mr. Harry Yada of our Land Division Hawaii District Land Office at 1-808-974-6203 or Nicholas A. Vaccaro of our Land Division Support Services Branch at 808-587-0438.

Very truly yours,

JAN Y. UCHIDA
Administrator

C: Hawaii District Land Office

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
PO BOX 451
HONOLULU HAWAII 96809

BENJAMIN J. CAVETANG
GOVERNOR



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

BRANK K. AMANU
DIRECTOR
DEPUTY DIRECTORS
GLENN H. OKAMOTO
JUDNEY Y. URASAKI

WIKIWI REFER TO

Dean Uchida
Page 2
February 7, 2001

HAR-EP
1651.01

Street is not under consideration as an access to Hilo Harbor under the *Hawaii Commercial Harbors 2020 Master Plan*. Access to the proposed Piers 4, 5, and 6 is planned via Kumau Street (highlighted in green).

We look forward to your review of the DEIS. If you have any questions or require additional information, please contact Glenn Soma, Harbors Division Planner, at 587-2503.

Att.

c: R. M. Towill Corporation (Gail Atwater)

bc: HAR-E, -H

GADW:sd

HAR-EP
1651.01

TO: DEAN UCHIDA, ADMINISTRATOR
LAND MANAGEMENT DIVISION
DEPARTMENT OF LAND AND NATURAL RESOURCES

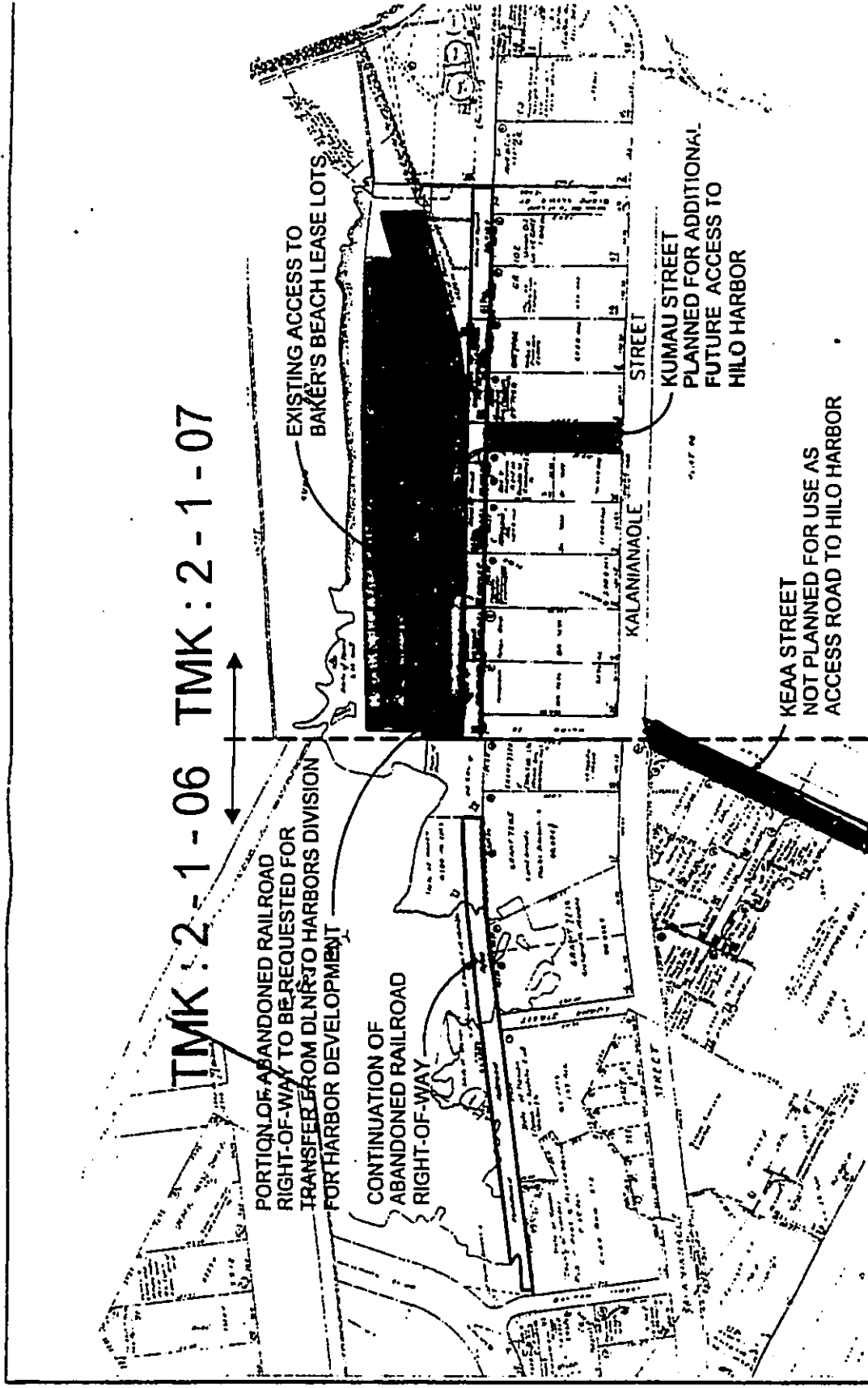
FROM: THOMAS T. FUJIKAWA
HARBORS ADMINISTRATOR
Thomas T. Fujikawa

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
(EISP/N) FOR THE HAWAII COMMERCIAL HARBORS 2020 MASTER
PLAN, ISLAND OF HAWAII

Thank you for your letter dated December 6, 2000 addressed to our consultant, R. M. Towill Corporation, providing comments on the above-referenced EISP/N. In response to your remarks regarding right-of-way issues at Hilo Harbor, we offer the following information. Please refer to Figure 1, attached, for the locations of the areas under discussion.

1. In regard to the 50-foot abandoned right-of-way that parallels the Banyan Road servicing Baker's Beach lease lots (highlighted in yellow in Figure 1), the possibility of providing a pedestrian walkway along this right-of-way could be discussed in the future when Harbors Division requests the transfer of the Baker's Beach lease lots from the Department of Land and Natural Resources (DLNR) to enable the construction of proposed Piers 5 and 6.
2. Concerning Baker's Beach lease lots and the Banyan Drive access road (highlighted in blue), Harbors Division will have to request the transfer of this land from DLNR to enable construction of the proposed Piers 5 and 6 passenger terminal.
3. Regarding Harbors Division's intent to develop the right-of-way along Keaa Street owned by the County of Hawaii as an access to the harbor (highlighted in green), Keaa





EISPN Comment Letter : D. Uchida, DLNR Land Division to C. Koga, RMTC, 12/6/00

 R. M. FOWELL CORPORATION

TMK Locations of Letter Items #1 - #4

Figure
1

INJAMIN J. CAYETANO
DIRECTOR



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
316 SOUTH KEMERU AVENUE
SUITE 202
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4186
FACSIMILE (808) 586-4186

GENEVIEVE SALMONSON
DIRECTOR

Kazu Hayashida
December 7, 2000
Page 2

Kazu Hayashida
Department of Transportation
Harbors Division
79 S. Nimitz Highway
Honolulu, HI 96817

Attn: Glenn Soma
Dear Mr. Hayashida

Subject: Environmental Impact Statement (EIS) Preparation Notice
Hawaii Commercial Harbors 2020 Master Plan

December 7, 2000

- 6. **Contacts:** In the draft EIS be sure to document all contacts made during the entire EIS process, including the pre-consultation phase, and enclose copies of any correspondence.
- 7. **Noise impacts:** Include a copy of the 1991 study (or pertinent sections) done by Ebisu to support your discussion on noise impacts.

If you have any questions call Nancy Heinrich at 586-4185.

Sincerely,

Genevieve Salmonson
GENEVIEVE SALMONSON
Director

c: Chester Koga

Please include the following in the draft EIS:

- 1. **Acronyms list.** Such a list will make it easier for the reviewer. Section 7.5, for example, contains NRCS, HAVO and HT&T. Terms such as these should be spelled out in the text and included in an acronym list.
- 2. **Master plan users groups input:** Include a description of the group sessions, how often they met and over what period of time, and the issues that were discussed.
- 3. **Maps:** Include neighborhood or area maps, with the project sites noted, in addition to those already provided.
- 4. **Project costs:** Disclosure of expenditure of state funds, including federal funds flowing through the state, is required by law. If exact amounts are not known, give a potential range of expenditures.
- 5. **Cultural impacts assessment:** Act 50 was passed by the Legislature in April of 2000. This mandates an assessment of impacts in local cultural practices by the proposed project. In the final EIS include such an assessment. For assistance in the preparation refer to our *Guidelines for Assessing Cultural Impacts*. Contact our office for a paper copy or go to our homepage at <http://www.state.hi.us/health/ceqa/index.html>. You will also find the text of Act 50 linked to this section of our homepage.

February 9, 2001

TO: GENEVIEVE SALMONSON, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
DEPARTMENT OF HEALTH

FROM: BRIAN K. MINA *Brian Mina*
DIRECTOR OF TRANSPORTATION

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
(EISPN) FOR THE HAWAII COMMERCIAL HARBORS 2020 MASTER
PLAN, ISLAND OF HAWAII

Thank you for your letter dated December 7, 2000, providing comments on the above-referenced EISPN. We offer the following responses:

1. Regarding the addition of an acronyms list, the Draft Environmental Impact Statement (DEIS) will provide such a list for the understanding of the reader (attached).
2. With regard to providing a description of the user groups input, the DEIS will include a summary of the proceedings. The summary will include: a list of user group representatives, meeting dates and locations, synopsis of main points discussed, user groups organization chart, user groups work flow diagram, and Governor and industry approval of the *Hawaii Commercial Harbors 2020 Master Plan*.
3. Concerning the inclusion of additional maps, the DEIS will include neighborhood maps with the project sites noted, in addition to those already provided in the EISPN.
4. On the topic of the disclosure of expenditure of government resources, the Department of Transportation, Harbors Division has provided to our consultant, R. M. Towill Corporation, estimated costs for proposed improvements at the Hilo and Kawaihae Harbors in the form of a probable range of expenditures. These will be included in the DEIS.
5. With regard to the requirement to provide a cultural impacts assessment as mandated by Act 50, Session Laws of Hawaii 2000, the DEIS will include a section entitled ARCHAEOLOGICAL, HISTORICAL, AND CULTURAL RESOURCES in which traditional cultural practices will be addressed for each harbor. This will include an

overview of the cultural history of the pertinent ahupua'a as well as summaries of interviews conducted with informants familiar with cultural practices in the ahupua'a associated with each harbor.

Specifically for Hilo Harbor, we commissioned the *Archaeological Inventory Survey, Hilo Harbor Expansion* by Haun & Associates during the DEIS preparation. This document presents the historical and cultural background of the Waiakea region of the Island of Hawaii as well as findings and recommendations. We supplemented information about cultural practices in the Hilo area with an extensive oral history interview with John Moses, a native Hawaiian and 44-year Hilo Harbor employee.

Kawaihae Harbor is located on dredged coral fill and is therefore a highly disturbed area with no archaeological sites. However, Kawaihae Harbor is near significant archaeological resources. The neighboring Tekekane lands form a buffer between the harbor and the Puukohola Heiau National Historic Site. Under the 2020 Master Plan, this buffer is retained. In addition, extensive oral histories with long-time Kawaihae residents were taken in preparation of the Cultural Survey Hawaii's report *Archaeological Survey and Testing, Kawaihae, South Kohala, Hawaii*. Informants included Akau, Masaru Doi, and Eddie La'au, Jr. Further, David Kawaihae, Superintendent of the Puukohola Heiau National Historic Site, provided names of additional resources that are familiar with cultural practices in the vicinity of Kawaihae Harbor. All of these will be included in the DEIS.

6. As to the need to provide documentation of all contacts, the DEIS will contain a full list of agencies, organizations, and individuals consulted during the pre-consultation phase and DEIS preparation phase. We will also provide copies of all correspondence in the DEIS.

7. On the request to include a copy of the 1991 study done by Ebisu to support discussion on noise impacts, the DEIS will contain more recent noise analysis from a September 2000 draft report entitled *Hilo International Airport Noise Compatibility Program Report, Hilo, Hawaii* which our consultant has obtained from the Department of Transportation, Airports Division. The study area for this noise analysis encompasses the Hilo Harbor area.

We look forward to your review of the DEIS. If you have any questions or require additional information, please call Glenn Soma, Harbors Division Planner, at 587-2503.

Att.

c: R. M. Towill Corporation (Gail Atwater)

cc: HAR-E, -H

GAVDW:sd

2001
2
1
6.01

ACRONYMS LIST

AAPA	American Association of Port Authorities	EPA	See "USEPA"
AAQS	Ambient Air Quality Standards	FEIS	Final Environmental Impact Statement
ADA	Americans with Disabilities Act	HAR	Hawaii Administrative Rules
AECOS	The consulting firm which performed the "Review of Water Quality and Biology in Kawaihae and Hilo Harbors for the Harbors 2020 Master Plan Implementation EIS" (Appendix E)	HAVO	Hawaii Volcanoes
BMP	Best Management Practices	HOISN	Hawaii Ocean Industry and Shipping News (publication)
BMPP	Best Management Practices Plan	HPD	Historic Preservation Division
C&D	Construction and demolition, a type of "waste" material	HT&T	Stevedore firm providing services to Hilo Harbor
CFR	Code of Federal Regulations	IMO	International Maritime Organization
CO	Carbon monoxide	ISTEA	Intermodal Surface and Transportation Efficiency Act of 1991
CZM	Coastal Zone Management, referring to the Coastal Zone Management Act of 1972 (P.L. 92-583), and Chapter 205A by the same name	LST/LSV	Landing Ship Tank/Landing Ship Vehicle
DAR	State of Hawaii, Department of Land and Natural Resources, Division of Aquatic Resources	LOS	Level of Service (traffic engineering term)
Db	Decibels (measurement of sound)	MG-1A	Zoning code for County of Hawaii pertaining to General Industrial lands, with 1,000 square feet of land area required per building site
DbA	A-weighted decibel, corresponding to human hearing range	MILLW	Mean Lower Low Water - level of water susceptible to flooding
DEEDT	State of Hawaii, Department of Business and Economic Development	MIPRSA	Marine Protection, Research and Sanctuaries Act (33 U.S.C. 1413)
DEIS	Draft Environmental Impact Statement	NAGIPRA	Native American Graves and Repatriation Act
DLNR	State of Hawaii, Department of Land and Natural Resources	NCDC	National Climatic Data Center
DNL	Day-Night Average Sound Level (also known as Ldn)	NMFS	National Marine Fisheries Service
DO	Dissolved oxygen	NPDDES	National Pollution Discharge System
DOH	State of Hawaii, Department of Health	NPS	National Park Service, Department of the Interior
DOT	State of Hawaii, Department of Transportation	NRC	National Research Council
EIS	Environmental Impact Statement	ODMDS	Ocean Dredged Material Disposal Sites
		OEQC	State of Hawaii, Department of Health, Office of Environmental Quality Control
		ORCA	Ocean Research Consulting and Analysis
		PCBs	Containing "polychlorinated biphenyls"
		pH	Measure of acidity

PM ₁₀	Measurement of particulate matter in the air
PPV	Peak particle velocity - measurement of ground vibrations
RM-1.5	Zoning code for County of Hawaii pertaining to Multi-Family Residential Districts, with 150 feet square feet of land area required per dwelling
RO/RO	Roll on/Roll off harbor facilities (see GLOSSARY OF TERMS for definition)
SEDF	Scaled energy distance factor
SHPO	State Historic Preservation Office, State of Hawaii, Department of Land and Natural Resources
SS	Precedes the name of a ship, e.g. SS Constitution, and means "Steamship"
USA	United States Army
USACE	U.S. Army Corps of Engineers
USCG	United States Coast Guard
USCS	United States Customs Service, Department of the Treasury
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service, Department of the Interior
UST	Underground Storage Tank
WQC	Water Quality Certification
YMCA	Young Men's Christian Association

HERBERT GEORGE AGAR, CHAIRPERSON
MEMBER OF LAND AND NATURAL RESOURCES
COMMISSION
DEPUTIES
JANET E. LAWRENCE
LINDA WISNIOKA



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kalahele Building, Room 555
601 Kalia Road, Suite 555
Honolulu, Hawaii 96817

PLANNING AND OCEAN RECREATION
SERVICES AND RESOURCES
INTEGRATION
COMPLIANCE
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS
LOG NO: 2697
PROJECT MANAGEMENT
DOC NO: 0101RC20

EDUARDO J. CAVITTANO
GOVERNOR OF HAWAII

Planning
Engineering
Environmental Services
Photogrammetry
Surveying
Construction Management



R. M. TOWILL CORPORATION
SINCE 1910

420 Waiakamalo Road
Suite 411
Honolulu, Hawaii 96817-0911
Telephone 808 842 1133
Fax 808 842 1937
eMail rmt@towillhawaii.com

January 30, 2001

Mr. Chester Koga, Project Manager
R.M. Towill Corporation
420 Waiakamalo Road, Suite 411
Honolulu, Hawaii 96817-0911

Dear Mr. Koga:

SUBJECT: Review of Archaeological Inventory Survey - Hilo Harbor
Facilities Expansion, Waikaeo, South Hilo, Hawaii
IMK: 2-1-07; 20-37; 2-1-09; 2-12-41, 42

This letter reviews this survey report which was received by our staff on December 15, 2000 (Haun & Henry 2000, Archaeological Inventory Survey, Hilo Harbor Facilities Expansion ... Haun & Associates ms.).

The report acceptably summarizes the ahupua'a and project area settlement patterns. Few, if any, traditional Hawaiian sites were expected, given extensive land alteration due to harbor and breakerwater construction.

The survey adequately covered the undeveloped portions of the parcels, finding 1 historic site (the slab foundations of an early 20th century structure). Soil is virtually non-existent in the parcels, and extensive land disturbance has indeed occurred.

We agree with the significance evaluation of the one site, significant solely for its information content (Criterion D of the Hawaii Register of Historic Places).

We also agree that a reasonable and adequate amount of that significant information was recorded during the survey and, therefore, no further mitigation work at the site is needed. The site needs no further protection.

The report is acceptable, and the historic preservation review process is completed. Development will have "no effect" on significant historic sites.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

c: Alan Haun, Haun & Associates
Planning Dept., County of Hawaii

December 11, 2000

Dr. Ross Cordy
Archaeology Branch Chief
State of Hawaii
Department of Land and Natural Resources
Post Office Box 621
Honolulu, Hawaii 96809

RE: Archaeological Inventory Survey, Hilo Harbor Facilities Expansion

Dear Dr. Cordy:

Please find enclosed the subject report prepared by Haun & Associates in October 2000. The report was generated to support the Environmental Impact Statement for the Hawaii Commercial Harbors 2020 Master Plan which is currently being prepared.

Please review the enclosed report and provide comments by January 15, 2001. We appreciate your input on this important study.

Very truly yours,

Chester T. Koga, AICP
Project Manager

cc: Gail W. Atwater, AICP, R.M. Towill Corporation
Glenn Soma, DOT-Harbors
Alan Haun, Ph.D



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

In reply refer to: KHIF

Chester T. Koga, AICP
R.M. Towill Corporation
420 Waiakamilo Road
Honolulu, Hawaii 96817-4941

DEC 13

Re: Environmental Impact Statement Preparation Notice for the Hawaii Commercial Harbors
2020 Master Plan - Island of Hawaii, State of Hawaii

Dear Mr. Koga:

The U.S. Fish and Wildlife Service (Service) has reviewed the above referenced Environmental Impact Statement Preparation Notice (EISPN). The EISPN was prepared by R.M. Towill Corporation, for the project sponsor, the State of Hawaii, Department of Transportation. The proposed project involves improving the facilities at Hilo and Kawaihae Harbors, Hawaii. This letter has been prepared under the authority of and in accordance with provisions of the National Environmental Policy Act of 1969 [42 U.S.C. 4321 *et seq.*; 83 Stat. 852], as amended, the Fish and Wildlife Coordination Act of 1934 [16 U.S.C. 661 *et seq.*; 48 Stat. 401], as amended, the Endangered Species Act of 1973 [16 U.S.C. 1531 *et seq.*; 87 Stat. 884], and other authorities mandating Service concern for environmental values. Based on these authorities, the Service offers the following comments for your consideration.

Improvements at Hilo Harbor include the development of a dry bulk cargo staging area: interisland cargo terminal at pier 4; overseas container terminal at pier 1; passenger terminal at pier 5; ocean research facility at pier 6; berths for commercial fishing vessels, US Coast Guard vessels, visiting and research vessels; two additional access roadways; and dredging berths for piers 3, 4, 5 and 6. Improvements at Kawaihae Harbor include the development of a liquid bulk cargo terminal; dry bulk terminals at pier 1; overseas container terminal at pier 2A; interisland cargo terminal at piers 3 and 4; passenger terminal or research station at pier 2B; military cargo terminal at pier 5; access road improvements; and dredging berths for piers 1, 2A, 2B, 3, 4, and 5. Construction-related activities will occur in or near the marine environment for each of the proposed projects.

The Service recommends that the Draft Environmental Impact Statement (DEIS) discuss the ecological impacts of the proposed Hilo Harbor and Kawaihae Harbor improvements for each of the alternatives under consideration. Particular attention should be given to addressing potential impacts to endangered and threatened species, coral-reef ecosystems, wetlands, migratory birds, rare native species and their habitats. Also, the DEIS should discuss plans to avoid or minimize

impacts to fish and wildlife resources. In circumstances where short-term or permanent impacts to fish and wildlife resources are unavoidable, the DEIS should discuss appropriate mitigation for each proposed action.

The Service is concerned that corals located in the vicinity of the project areas may be impacted as a result of the suspension of fine sediments in the water column due to project-related dredging activities. Suspended sediments can abrade and smother coral and algae in the nearshore environment. The Service recommends that Best Management Practices be incorporated into the project to minimize the project-related degradation of water quality and impacts to fish and wildlife resources and habitats, including coral-reef ecosystems. These measures should be fully described in the DEIS.

Finally, the Service is concerned that the introduction of marine alien species, by increased vessel traffic at Hilo Harbor and Kawaihae Harbor, may impact nearshore marine ecosystems by displacing Hawaiian marine species. Introduced species represent a major threat to the perpetuation of native marine plants and animals. The DEIS should include a detailed discussion of how the control of marine alien species introductions will be accomplished within the anticipated increase in vessel traffic at the harbors. The Service also recommends that the Hawaii Division of Aquatic Resources (DAR) be contacted regarding the prevention of marine alien species introductions to the State of Hawaii.

The Service appreciates the opportunity to comment on the EISPN and we look forward to reviewing the DEIS when it becomes available. If you have any questions regarding these comments, please contact Fish and Wildlife Biologist Kevin Foster by telephone at (808) 541-3441 or by facsimile transmission at (808) 541-3470.

Sincerely,

David Galambos
for Paul Henson

Field Supervisor
Ecological Services

cc: NMFS-PJAO, Honolulu
USEPA-Region IX, Honolulu
DLNR, Hawaii
DAR, Hawaii
CZMP, Hawaii
CWB, Hawaii

BENJAMIN J. CAVETANO
GOVERNOR



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

BRIAN K. MURRAY
DIRECTOR
DEPUTY DIRECTORS
GLENN W. BRADY
JANEY T. URUSAN

IN REPLY REFER TO
HAR-EP
1604.01

HAR-EP
1604.01

Mr. Paul Henson
Page 2
January 23, 2001

We look forward to your review of the DEIS. If you have any questions or require additional information, please contact Mr. Glenn Soma, Harbors Division Planner, at 587-2503.

January 23, 2001

Mr. Paul Henson
Field Supervisor, Ecological Services
U.S. Department of the Interior, Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

Very truly yours,

Thomas T. Fujikawa
Harbors Administrator

cc: HAR-E, HAR-H

GA/DW:im

Subject: Environmental Impact Statement Preparation Notice (EISPN) for the
Hawaii Commercial Harbors 2020 Master Plan, Island of Hawaii

Thank you for your letter dated December 13, 2000, which was addressed to our consultant,
R. M. Towill Corporation, providing comments on the above-referenced EISPN. In response to
your remarks, we have the following information.

1. Regarding the need to address ecological impacts of the proposed Hilo Harbor and
Kawaihae Harbor improvements for each of the alternatives under consideration, marine
biological and botanical surveys were conducted at each harbor during the Draft
Environmental Impact Statement (DEIS) preparation. Biological experts indicate that the
subject harbors are not a habitat for endangered or threatened animals or plants. Findings
will be included in the DEIS. Further, the DEIS will include discussion of how any
short- or long-term impacts on identified biological resources will be avoided or minimized
as well as any mitigation measures that will be necessary.
2. With reference to addressing the impacts that the various improvements will have on coral
in the two subject harbors, the DEIS will include discussion on the short- and long-term
effects of the proposed construction projects on coral. Further, mitigation measures and
Best Management Practices will also be described.
3. On the subject of addressing the introduction of marine alien species due to increased
vessel traffic at Hilo Harbor and Kawaihae Harbor, the DEIS will include detailed
discussion of the methods for controlling alien species. Also, as suggested, we will
consult with the Department of Land and Natural Resources, Division of Aquatic
Resources, regarding the prevention of alien species introductions from foreign ships at
the two subject harbors.



Momi Subiono
HC-1 #16
Captain Cook, Hawaii 1 96704
1-808-328-8839

R.M. Towhill Corporation
420 Waiakamilo Road, suite 411
Honolulu, Hawaii 96817
RMTC Reference No. 1-18844-0E

Aloha, Mr. Kolga, Gail Atwater, Brian Taketa,

I'm writing to you in regards to the 2020 Master Plan for Hawaii Commercial Harbors. I have a copy of the Environmental Impact Statement and have been studying it and found several discrepancies in it and I would like you to make arrangements to correct them.

First, on page 25 (3.11), it states that, "Kawaihae Harbor. There are no known rare, threatened or endangered species on the project site. Doves and cardinals have been observed (Personal communication, Winona Char, Botanical Surveyor, 2000). This statement is false because there is a species of shell that is at risk of going extinct because of the extra gas and oil that will be emitted into the revised harbor at Kawaihae. Thus, affecting the water quality. These shells cannot survive the extra pollution created from bigger boats coming into the shoreline. Obviously Winona Char is a Botanical Surveyor and knows nothing about fauna of the sea. I urge you to do another study on this. The cultural significance of these shells is important to Hawaiian people and the stewarding of the ecosystem of our island and this project will stop us from doing so. These shells are only found in the waters of Kawaihae small boat harbor and are not found on any other beach. Therefore, the species from this island will go extinct if this project is continued. Our right to gather them cannot be taken away due to the greed of the States Department of Transportation.

Second on page 27 (3.15) "Land Use and Ownership. Existing land uses are discussed above in Section 2.2 Both harbors are owned by the State of Hawaii. The harbors are located on ceded lands."

I find it horrifying to find that ceded lands are being used by the state and Hawaiian people's right to gather from our ceded lands are being relinquished. I find this another case of what is being done with stolen land.

Third, (On page 12) the use of Pua Kalima o Kawaihae will be relinquished according to Figure 5 (See map). I do not see an area where Pua Kalima o Kawaihae will be able to use. Which tells me that you plan

to keep the Community out of the area.

Fourth, on the same page The area known as the Pelican Lands is within the harbor boundary but has been excluded from action under the 2020 Master Plan. This area is used as a coral stockpile and serves as a buffer area to the nearby Pu'u Kohola National Historic Site, and adjacent land use. Also nearby the harbor property is the submerged Hale O Kapuni historic area.

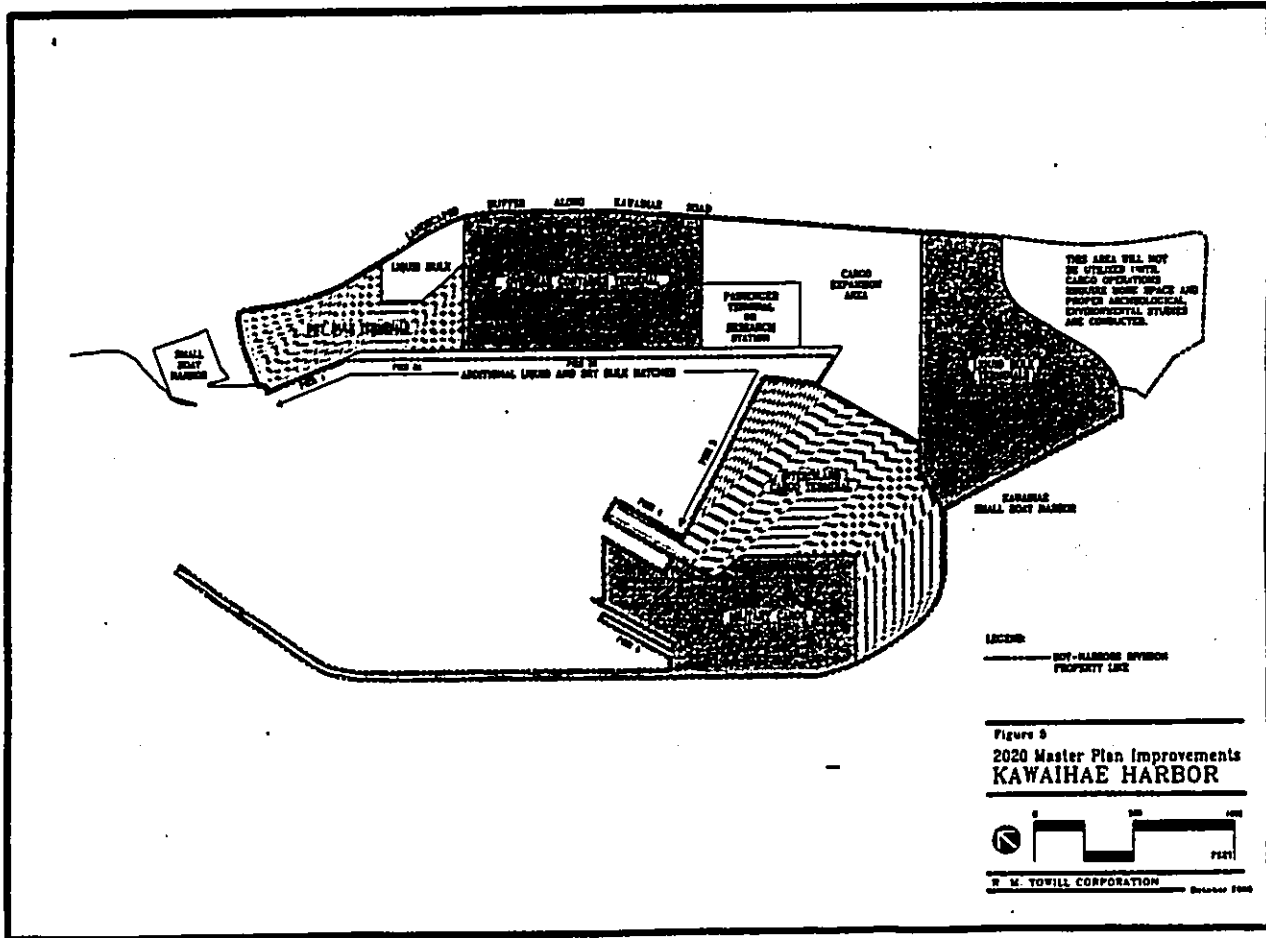
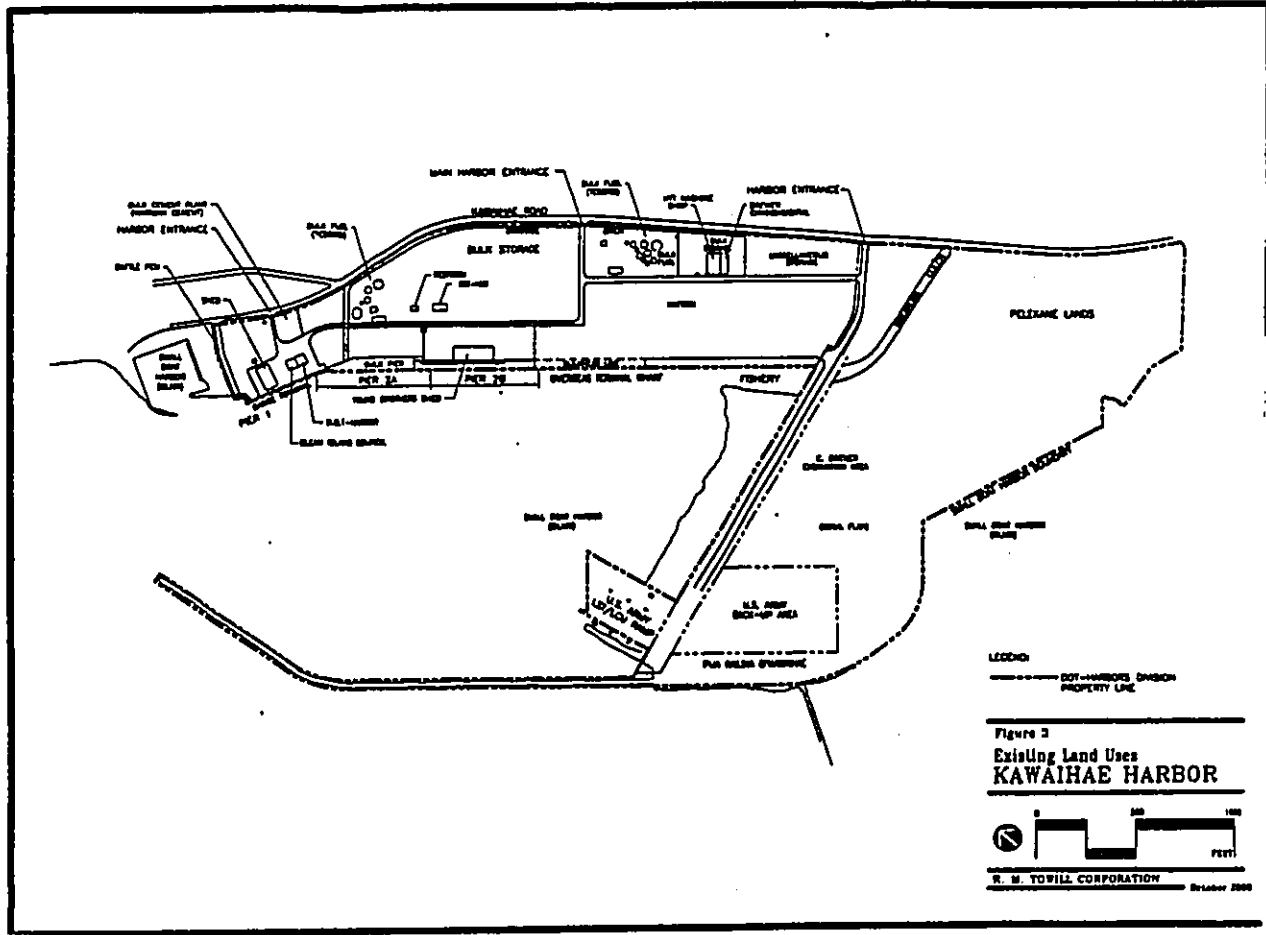
On figure 5 (see map) your map shows that the Pelican Lands will be used as a Liquid bulk terminal, Interisland cargo terminal, and military cargo. I do not see it as a buffer leaving the National Historic Park of Pu'u Kohola open to damage due to extra development of the harbors and increased activities in the area.

I find your Environmental Impact Statement incorrect, and I am demanding that you do more research on the shells and the impact of our islands ecosystem that this project will create.

Sincerely,

Momi Subiono

Momi Subiono
Teacher of Hawaiian Studies
and concerned citizen.
HC-1 #16
Captain Cook, Hawaii
96704
1-808-328-8839



BENJAMIN J. CAYETANO
GOVERNOR



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

BRIAN K. MINAANI
DIRECTOR
DEPUTY DIRECTORS
GLENNAL OSMOTO
JADWIE Y. DRUGSADI

WHERE REFER TO
HAR-EP
1532.01

January 11, 2001

Ms. Momi Subiono
HIC-1, No. 16
Captain Cook, Hawaii 96704

Dear Ms. Subiono:

Subject: Hawaii Commercial Harbors 2020 Master Plan
Environmental Impact Statement (EIS), II. C. 5326

Thank you for your letter requesting our correction of several discrepancies in the subject EIS.

By copy of this letter, we are instructing our consultant, R. M. Towill Corporation, to investigate your concerns and provide a more detailed response.

Please contact Mr. Glenn Soma, Harbors Division Planner, in Honolulu at (808) 587-2503 if you have any questions.

Very truly yours,

Brian Minaani

BRIAN K. MINAANI
Director-Designate of Transportation

c: Ms. Gail Atwater
R. M. Towill Corporation (with copy of incoming letter)

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(1)

(2)

DIRECTOR'S OFFICE
DEPT. OF
TRANSPORTATION

Momi Subiono
89-709 Lani Kona Road
Captain Cook, Hawaii
96704

(808) 328-8939
T-5 Highway

State Of Hawaii
Department Of Transportation
869 Punchbowl St.
Honolulu, Hawaii
96813-8097
January 18, 2001

Dear Mr. Mimaal, Mr. Soma,

I am again writing to you in regards to the Proposed big boat harbor at Kawaihae. I am glad that you are going to do more studies on the ocean life on the area but I am writing to you in regards to the cultural significance and the population explosion that the Kawaihae small boat harbor will create.

The art of shell lei making in Hawaii is very important to our island lifestyle and we don't want you to make the harbor any bigger than it is. We want to save the ecosystem of our whole Kona, Kohala coastline. I know people who have been gathering this precious resource in the area for 30 years and before the harbor was created, people have been collecting these shells from the first beach which was destroyed.

I have observed children learning how to swim and surf in the area also. Are you going to take the beach away from them also? The hotels have taken over the other beaches and you have to walk very far to get to those beaches since they have put up gates and limited parking in the area.

You say that it's for the good of all the people of this island and I think to differ. How about letting us support our own businesses instead of relying on imported goods instead of buying our own products.

Here are some reasons for me not wanting the harbor developed.

1.) Population explosion on the island will be encouraged by the harbor, and the "developments" the harbor will support. (in fact, land development is land spoilage). We have already seen what happened to the ecosystem of the area right below Pu'ukohola heiau. The extra sit on the coral beds killed all the coral in the area. (Have your oceanographer check that out).

2.) The new jobs will not go to the present residents of Hawaii. The new positions will be filled largely by employees of the large corporations which they will import from elsewhere.

3.) Contrary to what Mr. Soma thinks....The new housing and new towns will drive up property values and property taxes to levels which will make it impossible for most individuals to continue to live in their present homes. They will not be able to afford the higher taxes and higher prices. This pattern has occurred many times elsewhere. Examples, Vail and Aspen, Colorado, O'ahu.

4.) The quality of life in Hawaii will be rapidly degraded by the new highways, housing developments, industrial facilities, that will come from the development encouraged by the new harbor. I am from Kaneohe and I don't want this island to become another O'ahu. Glen you say you live in Paradise? Look out your office window. What do you see? Mountains or buildings towering above your head. You can barely see mountains!

5.) The harbor will help large corporations become richer. It will "not" help Hawaii. In fact, it will generate more havoc in the area.

6.) This project will harm the Hawaiian people who gather and use the area for fishing (all the fish will die and become inundated by the extra pollution.) You have already stole the land, don't take our right to gather that we have exercised in the area for centuries.

7.) There are no other places where the local people can go for beach recreation since Spencer Park is overcrowded and the water polluted by all that sunscreen that the foreigners wear in the water.

8.) The Hotels have taken over the other beaches and have made it very hard for people to get to unless you are guest of their hotels.

9.) The ceded lands should have never been stolen from the Hawaiian People and now our cultural rights to gather from the area are once again being taken away.

I'm very interested in finding out how you can stop this all from happening and still build the harbor. So I am urging you all to stop this development now.

Sincerely, Momi Subiono.

Momi Subiono

BENJAMIN J. CAVETANO
GOVERNOR



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

BRIAN K. MINAMI
DIRECTOR

DEPUTY DIRECTORS
GLENN M. OKAMOTO
JADNEY Y. URAJAKI

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Ms. Momi Subiono
Page 2.
February 22, 2001

HAR-EP
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Pelekane lands. Further, the DEIS will cover any potential impacts of the proposed improvements on nearby archaeological resources.

5. In reference to further research on shells and the impact on the islands ecosystem - the impacts of proposed harbor improvements will be disclosed in the DEIS along with proposed mitigation measures to reduce or eliminate the short- and long-term impacts.

The following addresses the comments in your second letter:

1. In regard to your concern that Kawaihae Harbor will increase the population in the surrounding area, the DEIS will address population projections for west Hawaii and the growing population's need for additional commercial harbor facilities.
2. You expressed concern that new jobs will not go to the local residents - please be advised that all Harbors Division employees will be hired in accordance with State of Hawaii equal employment opportunity hiring procedures. The Harbors Division does not interfere with or dictate the hiring practices of private firms.
3. About your concerns that new housing and new towns will increase property values and subsequent property taxes - the DEIS will contain information on projected population growth and real estate trends in west Hawaii and their relationship to harbor development.
4. About your concern on the loss of gathering rights - the DEIS will include a section that discusses traditional cultural practices, including traditional gathering activities at the two commercial harbors.
5. The matter of hotels and access issues should be discussed with the hotels involved.
6. About your concern that harbor property is located on ceded lands - the use of such lands by the State will be discussed in the DEIS.

If there are any questions or concerns in this matter, please call Mr. Glenn Soma, Harbors Division Planner, at 587-2503

Very truly yours,

BRIAN K. MINAMI
Director of Transportation

c: Gail Atwater, R. M. Towill Corporation

Ms. Momi Subiono
HC-1 #16
Captain Cook, Hawaii 96704

Dear Ms. Subiono:

Subject: Environmental Impact Statement Preparation Notice (EISPN) for the Hawaii Commercial Harbors 2030 Master Plan, Island of Hawaii

Thank you for your letters dated November 29, 2000 and January 18, 2001, providing comments on the subject EISPN.

The following addresses the comments in your first letter:

1. Regarding your comment that questions the validity of a statement contained on page 25 of the EISPN that reads, "there are no known rare, threatened or endangered species on the project site" - botanical and marine biology surveys were conducted and will be discussed in the Draft Environmental Impact Statement (DEIS). The shells you speak of finding on the coral stockpile will also be addressed in the DEIS
2. About your concern over the loss of gathering rights and the use of ceded lands - the DEIS will include a section that discusses traditional cultural practices, including traditional gathering activities at the two harbor sites. The DEIS will review cultural histories of the pertinent ahupua'a and provide summaries of oral histories. Further, the DEIS will include discussions of the use of ceded lands by the State.
3. Concerning the Pua Kailima O Kawaihae recreational, educational, and cultural ocean activities site in Kawaihae Commercial Harbor - the State of Hawaii and Pua Kailima Cultural Surf Park, Inc. entered into a five-year cooperative agreement on December 31, 1997 that permits this nonexclusive use of Kawaihae Commercial Harbor land. Should Pua Kailima Cultural Surf Park, Inc. desire to renew this agreement, we will re-evaluate the safety considerations of mixing recreational activities with heavy industrial operations at such a time. We always strive to minimize any accidents to visitors of our commercial harbors. Safety is a primary operational concern.
4. You expressed concern over the adverse effects of the proposed harbor improvements on Pelekane lands. The DEIS will discuss the proposed improvements in relation to the

Mr. Chester T. Koga
January 19, 2001
Page 2

- 1) Storm water runoff associated with construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than five (5) acres of total land area (equal to or greater than one acre after March 10, 2003).
- 2) Hydrotreating water, and
- 3) Construction dewatering effluent.
- 4) The Department requires that Notices of Intent (NOI) for NPDES general permits be submitted thirty days before the discharge is to occur. NOI can be picked up at our office or downloaded from our website at <http://www.state.hi.us/doh/eh/cwb/forms/index.html>.

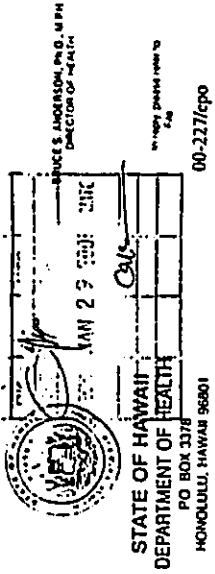
Should you have any questions on this matter, please contact Kris Poemts, Engineering Section of the Clean Water Branch, at 586-4309.

Sincerely,


GARY GILL

Deputy Director
Environmental Health Administration

c: CWB
NRS/AQB
CAD



January 19, 2001

Mr. Chester T. Koga, AICP
R.M. Towill Corporation
420 Waikamilo Road
Honolulu, Hawaii 96817-4941

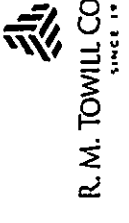
Dear Mr. Koga:

Subject: Environmental Impact Statement Preparation Notice (EISP/N)
Hawaii Commercial Harbors 2020 Master Plan
Island of Hawaii

Thank you for allowing us to review and comment on the subject document. We would like to see the following items addressed in the Draft EIS:

- 1 The control of fugitive dust during construction activities.
For questions concerning fugitive dust, please contact Mr. Ed Yamamoto of the Clean Air Branch in Hilo at (808) 933-0401 and Mr. Steven Okaji of the Clean Air Branch in Kona at (808) 322-1507.
- 2 The control of noise during construction activities.
Should there be any questions on this matter, please call Russell S. Takata, Program Manager, Noise, Radiation and Indoor Air Quality Branch at 586-4701.
- 3 Water Pollution
 - a. The Army Corps of Engineers should be contacted to identify whether a Federal permit (including a Department of Army permit) is required for this project. If it is determined that a Federal permit is required for the subject project, then a Section 401 Water Quality Certification would also be required from our office.
 - b. If the project involves any of the following discharges into State waters, National Pollutant Discharge Elimination System (NPDES) general permit is required for each activity:

420 Wai'anae Road
Suite 411
Honolulu, Hawaii 96817-8911
Telephone 808 942-1133
Fax 808 942-1937
eMail info@rmtowill.com



Planning
Engineering
Environmental Science
Photogrammetry
Surveying
Construction Management

We look forward to your review of the DEIS. If you have any questions or require additional information, please contact Gail Atwater, AICP at R.M. Towill Corporation, 842-1133 or Glenn Soma, Harbors Planner at the Department of Transportation, Harbors Division, 587-2503.

Very truly yours,

Glenn Soma
Chester T. Koga, AICP
Project Manager

C: Department of Transportation, Harbors Division (Glenn Soma)

February 23, 2001

Mr. Gary Gill, Deputy Director
Environmental Health Administration
Department of Health
Post Office Box 3378
Honolulu, Hawaii 96817-4941

**SUBJECT: ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE
(EISP/N) FOR THE HAWAII COMMERCIAL HARBORS 2020
MASTER PLAN, ISLAND OF HAWAII
File 00-227/epo**

Dear Mr. Gill:

Thank you for your letter dated January 19 providing comments on the above-referenced EISP/N.

With regard to the control of fugitive dust during construction activities, the Draft Environmental Impact Statement (DEIS) will include information on control measures. Mr. Ed Yamanato and Mr. Steven Okaji of your staff provided consultation with regard to the DEIS discussion of fugitive dust control measures for the subject harbors.

Concerning noise during construction activities, we contacted Mr. Russell Takata of your staff to review mitigation measures in the DEIS regarding noise during construction. The DEIS will address restrictions on the hours in which construction can occur, as well as the requirement for a Community Noise Variance if construction is to occur beyond the established hours.

With regard to water pollution, the DEIS will include information about permits that may be required, including Department of the Army permits, Section 401 Water Quality Certification and National Pollutant Discharge Elimination System (NPDES) permits.

With regard to the requirement for Notice of Intent for NPDES, the Department of Transportation will comply with notice requirements prior to any construction-related discharge.



Appendix A-2

DEIS COMMENT LETTERS AND RESPONSES

**LIST OF PERSONS, ORGANIZATIONS
AND PUBLIC AGENCIES COMMENTING ON THE DRAFT EIS**

1	<i>Momi Subiono (11 letters and 1 email)</i>
2	<i>State of Hawaii, Department of Accounting and General Services</i>
3	<i>Liz DeRoche</i>
4	<i>Jesse Wolf</i>
5	<i>KIAA, Inc.</i>
6	<i>Elfriede Wilkins</i>
7	<i>State of Hawaii, Department of Defense</i>
8	<i>County of Hawaii, Department of Public Works</i>
9	<i>State of Hawaii, Department of Health</i>
10	<i>Dnitra Ayers</i>
11	<i>Robina Nalani Subiono</i>
12	<i>State of Hawaii, Office of Environmental Quality Control</i>
13	<i>Josephine Keliipio</i>
14	<i>U.S. Department of the Interior, Fish and Wildlife Service</i>
15	<i>State of Hawaii, Department of Hawaiian Home Lands</i>
16	<i>Department of the Army, U.S. Army Engineer District, Honolulu</i>
17	<i>University of Hawaii, Environmental Center</i>

**PERSONS WHO SIGNED PETITIONS REGARDING
KAWAIHAE HARBOR**

Thomas Oden
Kyle Rogers
Wally Tavares
Nicole Montalvo
Paul Maciaz
Sam McFadden
Jeannine Williams
Chris Arunda
Cora Rillero
Mel Bahasa
Monique Edwards
Ray Strauss
Mark Ayers
Bullet Obra
Renee Balanga
Nui Balanga
Alani Balanga
Ming Balanga
Donald Bois
Melissa Kaupiko
Tennille Howard
Nikki Howard
Arthur Howard
Shantel Abong
Shila Abong
Ron Cuber
Christopher Young
Islia Young
Cameron Young
Jun Balanga
Jayme Leslie
Edsen Walker
Jaron Abran
Barry Keller
Dennis McKenna
Buff Willard
Boupy Campbell
Cindy Oswald
Rick Johnston
Rosemary Alles
Patricia Owen
Jonathan Kug
Kaiki Gunderson
Nohea Masaoka
Aurora Ministero

Peter Ministero
Grant Tiganger
Lloyd Kenny
David Kaahiwihwi
Arthur Enriques
Doug Ing
Dolores LaMadrid-Ahu
Eric Ahu
Myron Guerrero
Jarrett Enriques
Shellie Labrados
Tasha Nihau-Lindsay
Garren Lindsay
Isaiah Lindsay
Betsy Lindsay
Kili Beall
Kahea Wakinekona
Ezekiel Wakinekona
Scott Pratson
Gale Stinnett
Jayne Heinze
Alfred Lopez
Robyn Pescaia
Holly Crane
Iko Baluya
John Marram
Ed Crane
Robin Williams
Sydette Kalau
Maka Kalau
Danny Maligro
Tamiko Kaneko
Noelle Kall
Shawn McVeigh
Bob Black
Larry Davis
Bill Madem
Patrick Ganley
Jeannette Martin
Kerry Mertz
Cheech Sarme
Michelle Banguan
Lynsey Martin
Dnitra Ayers
Barbara Cox

M. Sonohara
Marine Pauli
Esther Okada
Tammy Meyer
G. Gavanhos
N. Kuhns
L. English
Austin Latimer
Bill Cyr
Susan Cyr
Alex Espanida
Conrade Mercado
Kaipo Young
Norman Ventura
Meleana Aming
Ekele Andrade
Eva Kealamahia
Gail Souza Save
Elaine Loo
Marjorie Spencer
Sega Lace
Mary Lindsay
Sarah Kiho
Earl Bell
Jane Asing
Doris Johnson-Purdy
Martin Purdy
Mahina Kahulelia
Allen Lindsay
Denise Murphy
Lenette Hudgins
Chris Puong
Bridgett Horani
Linda Healou
Sharon Mayberger
Laura Juison
Janice Lunch
Pua Seike
Rochelle Dougherty
Ellen Freitas
Mike Funk
Frank Funk
Jeremy Padakea
Jason Kong
Gary Sizar

Ray Ledward
Mark Harry
Tamara Onek
Heidi Hemmings
Keoki Lindsay
Paulette McNerney
Carolyn Roit
Cherisse McKent
Randy Botti
Lamber Lee Lau
Abbott Galaher
Kevin Lindsay
Mark Evans
Bob Bauer
Brandon Bruce
Brice Ayau
Afa Tuaolo
Kimo Kau
Donai Dawson
Chad Kunhour
Rise Ramos
Heda Lindsay
Kenny Virgilio
Raleigh Loando
Mel Paoule
Leo Santimer
Mark Collins
John Baehr
Darren Tagama
Jim Elliott
Marjorie Santos
Gerri Lee Hong
Don Hoover
Joseph Pierson
Denise Lindsay
Beth Graves
Steve Olson
Ken Ambrosio
Maria Noaldo
Melissa Soares
Shelly Nakamura
Charmaine Alameda
Kathy Kataoka
Malia Reynolds
Michelle Peleiholani
Ethel Robertson
Star Verece
William Whitehead
Natalie Juan

Jasmine Juan
Winnie Wrixon
Jon Rosa
Ashely Morris
Kay Hansen
Lisa Panker
Liloa Papa
Ted Lindsay
George Mann
Mike Mann
Ernest Tsu
Kenneth Tsu
Kaaren Lo
Nalei and Puou Kunewa
Atwood Hooper
Pua Dawson
Bo Meileato
Robert Hoffer
Maile Hoffer
Maka Kaluna
Solomon Kaluna
R.D. Trenary
H.K. Makua
Ernest and JoAnn Reyes
M.E. Maikui
Cameron and Christina
Lopes
B. Kaimiloa Chrisman
Momi Subiono
K. Subiono
D. Subiono
Marjorie Beisto
Judith Guerto
W. Gonzalez
Noelani Harvey
Joyce Havarkato
Zac Vanderschuff
Enid Murty
Edwina Murty
Morgan James
Patrick Favors
Gary Ross
Rene Ross
Kaleo Bertelman
Penny Bertelman
Andrea Reish
Darralyn Clarke
Craig Clarke
J. Wilkins

Kurtis Yamauchi
Carol DeFazio
Carol Carroll
Terry Wallace
Mark Louis
Jon Hopcia
Carmen Waltner
Suzanne Marek
John Joaquin
Carey Lindenbaum
Mary Prevet
Craig Iwanaga
Cami Iwanaga
Deborah Wiley
Diana Wolking
Celeste Deniz
Edward Deniz
Mora Meddler
Andrea Chin
Mark Gamble
Sam Kaeo
Kilohana Domingo
Gary Garbone
Janice Lakala
R. Mitchell
Byron and Lenora Wright
Clyde Brhumaghim
Terry Canda
Shane Domingo
Aka Dooley
Jessica Medeiros
Julie Bushman-Smith
Jessie Eames
Patty Eames
Carol Farkas
Rafael Ramirez
Isaiah Bobner
Albert LaRosa
Jim Wiley
Gretchen Kelly
Danny Rounds
Kauila Ho
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Kii Morse
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Kathy Sherry
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Mark Miller

Loke Hochuli
Getta Patterson
H. Patterson
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Bonnie Haas
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Marni Tavares
Claudette Feeney
Deirdre H
Frank Feeney
Deirdre Kaihana
Glen Kaihana
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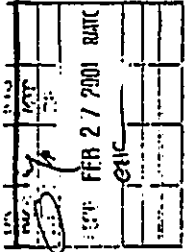
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Alyce Yamaguchi
Rose Spencer
Dave Douglas Kamuela
Paul Truman
Rascke Kong Ahana
G. Ahana
Kathy Broom
Carolyn Holloway
D. Holloway
Everett Knowles
J. Subiono
Charmaine Paapala

+ 33 illegible signatures.
If those petitioners'
addresses were legible,
response letters were
addressed to "Resident."

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**Pupu O Kawaihae
A Hawaiian Account of
Shells of Kawaihae
&**



**Scientific Descriptions and Hawaiian Uses of Hawaiian shells:
1 of 11 pages. Testimony of Momi Subiono a Hawaiian person**

on, February 12, 2001

The following is an account from a Hawaiian point of view. The scientific portion, is research that I have done on the shells in an effort, to insure perpetuation of the art of shells in Hawai'i and to make aware the need for protection of them.

The need for developers and politicians, to take into consideration the environment that we inhabit and many times take for granted until it is too late, is the most important matter we are faced with today. Paramount is the ability for our island to maintain sustainability.

Examples of unhealthy development: The Island of O'ahu, Aspen, Colorado. The protection of the beauty of an area should also be taken into consideration. The people of the island should be able to say what development is allowed to go on in their neighborhoods. The cultural significance of the area is obvious. Yet, the State of Hawai'i chose to pick this sight for a new and (so called) improved harbor. Before the LST ramp was created, people spent time along the shore of Kawaihae. It is fair to say, that before the first development of the area which, created the LST, small boat harbor site, shells were found on adjacent beach right below Pu'ukohola National Historic site. Because of this first development, the coral on the adjacent beach from the harbor has been killed off. Shells are not found anymore on that beach and are also not found at Spencer Park. The shark heiau was of cultural significance then, and it remains so, according to the Hawaiian people. The

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obstruction of the free flow of the sharks migrating in the area from ancient times, occurred because of the first development which created the LST ramp.

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In the early days, Hawaiian people lived with nature. They learned this by trial and error. They knew how important it was to protect it, as well as use it to the best of their ability. The kapu on certain fishes while spawning, tells us that the Hawaiians had scientific inquiry as well as knowledge. It was the key factor that allowed them to survive as a vibrant culture which the Hawaiians of today, are very much a part of. Developers have been allowed to bulldoze over Hawaiian bones and desecrate areas of high cultural significance. They say for the good of all people. Is it really for all the people? Or is it for the good of business owners, who don't really care for the land?

I am writing this in respect to all my ancestors who were here before and their fathers, fathers, and mothers, mothers and anyone else who resided on these beautiful islands of Hawai'i before 1778.

Every person was allowed to move from one ahupua'a if they chose to. The ahupua'a system cannot be used by the State to hinder our gathering rights. The State and Private Owners, have kept us from access to the shoreline in our own ahupua'a. Not allowing the community to enjoy gathering and recreational area. Are you prepared to build bigger prisons? Development also brings more crime as well. What will our youngsters and families do in there free time, with no recreational area.

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3

We live in modern times and have cars, stores, and imported goods, and we all have the right to make a living.

This by no way, means that we should be able to overload our islands and destroy our native belief, ways and environment.

With all this in mind, I would like to start this account from the

view of a Hawaiian person who loves and cares for the environment, and chooses not to allow the state to destroy the Hawaiian peoples right to gather from the land (aina). All are responsible for caring for it. I greatly "oppose" the

improvements on Kawaihae harbor, because it creates population explosion, more pollution on our island, takes the right of our community to have a recreational area (the hotels have greatly hindered our access to the shoreline) and now the State of Hawai'i, continues this activity that will take from our community once again which leads to higher crime rate in the long run because the people and children will have hardly anywhere to relax and enjoy. Last, it harms the Hawaiian people and infringes on the basic human rights of native people to gather.

Family Turbinidae

These shells are nicknamed turban shells, are in a large family of globose, these whorled shells which range in height form about 50 mm to less than 1mm. The shape is similar to a top shells. A deep trench in resemblance of a turban separates the whorls. The most famous of the turban shells are easily recognized for it's cats eye door called an operculum. The type

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of cats eye door is the characteristics of all turban shells. These animals are herbivorous and feed on seaweed (limu).

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1. *Leptothyra verruca* (Gould 1845) This turban shell, about 5mm in diameter and 5 mm in height, is faintly spirally sculptured and variously colored brown, green, or red. It may be white, spirally banded with red and brown, or almost entirely brown or red. The operculum is thick and white.

These turbans live in tide pools and under rocks. The Hawaiian name for the shell is Kabelelani. Named after a beloved chief of Kaua'i where they are found in abundance. At Kawaihae, turban shells are found moderately but we have not seen them on adjacent beaches.

2. *Turbo Sandwicensis* A larger variety of Hawaiian turbans shell which can grow more than 50 mm. The shells are green, gray, black and brown. The operculum is green and brown. This shell is common under rocks in shallow waters and on reefs outer edges. This is a native to Hawai'i and care should be taken where these shells are concerned. As any native creature to Hawai'i.

Family Strombidae

Strombids are recognized by the outer thick lip. The interesting fact about Strombids is there ability to move through the water.

The narrow muscular foot digs into the sand enabling the animal to move in a sort of leaping manner. At times, more than a meter in distance. These animals are herbivorous, and feed on filamentous algae.

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1. *Strombus maculatus* (Sowerby, 1842) This shell is elongate, with swollen shoulders, and is cream colored with brown designs and white on the inside. The Hawaiian word for this

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shell is Alilea and known commonly as the large dove shell. These shells are strung in the pikake rope style and resemble the momi shell. They are strung on nylon monofilament fish line. Because piercing these shells are difficult, they are not often, made into leis. The leis are bulkier therefore, mostly worn by men. These shells are frequently found at Kawaihae small boat harbor. These shells live at a depth of 2 m. A good days find is 6.

Family Cypraeidae

This family cypraeidae, are more commonly known as cowries. The Hawaiian word for the animal is leho. Culturally, the Hawaiian people would use this shell in the catching of octopus. It is the most popular because of its shine and elaborately patterned shell. They are found from shallow waters to depths of about 100 m. They feed on a variety of algae; some others feed on sponges. Extra pollution could affect the food source of these animals. Over collecting is definitely a problem in its habitat. Whenever I find these shells at Kawaihae, they have already been vacated. During high surf I have found live specimens but as a means of conservation thrown it back. Cowries are used at the ends of shell leis.

A variety of Cypraeidae live in Hawaiian waters.

Cypraea mauritiana also known as the fire cowry. Known in Hawaiian as Leho `ula are highly prized and very

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rare.

Cypraea maculifera known in Hawaiian by leho kolea because it's designs resemble the kolea bird.

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Cypraea caput-serpentis resembles the head of a serpent. This species is native to Hawaii. Also known as "black cowry" poleholeho `ele`ele, poleholeho kupa this cowry is native to Hawaii.

Cypraea granulata Known to Hawaiians as leho `o kala or leho `o pu `u pu `u and rough cowry. The unbleached ones are known as pink cowry or poleholeho `akala.

Cypraea helvola Is species of cowry that is variegated in color. Known by Hawaiians as Leho `o pule.

Cypraea moneta is also known in Hawaii as a white money cowry or coral cowry. In the Hawaiian islands it grows about 26 mm in length and is recognized by it's triangular shape and its yellow color.

Cypraea isabella These cowries, about 32 mm in length, are cylindrical in shape, orange-brown with linear black streaks, and with the extremities dark brown. The animals are common in shallow water and have been recorded to depth of about 80 m. These shells are also known as bracelet cowry and poleholeho lenalena.

Cypraea sulcidentata about 35 mm in length, the oval shell is creamy brown, and banded by four darker bands. These

animals live in deep water on coral heads.

Family Columbellidae

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Columbellid shells are distinguished by their shape and polish, often brightly colored shell. They have a variety of colors and sculpture. Some are herbivorous while, others are carnivorous.

Anachis miser are also known as bumpy laiki or rice shells. Colors range from pure white, to mixed brown or black designs. They are strung like momi shells but because they are larger fewer shells are needed.

The shell is found in shallow water. *Anachis miser* is found at Kawaihae. These shells will not be able to survive if the harbor is dredged deeper.

Euplica Varians (Sowerby, 1832) These shells are about 10mm in length, are conical, solid, with a wide shoulder, and noded below the suture on the last whorl. The people of Ni'ihau have used these shells in the making of elegant leis which are highly prized in Hawai'i. There are many varieties of colors some identified here by the Hawaiian names.

1. Momi 'onikiniki- white splashed with brown spots.
2. Momi Lenalena- Yellow in color.
3. Momi ke'oke'o - Pure white in color.
4. Momi kahakaha- Yellow background variegated with brown stripes.
5. Momi uliuli Shells with a blue hue.
6. Momi waha'ula'ula - White shells with red as if dipped in red paint.
7. Momi 'onikiniki 'ele'ele- White shell splashed with black

8. Momi kahakaha ikaika- Richly designed with kahakaha spots.
pattern.

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9. Momi uliuli ikaika- E. Varians very dark in color. Said to be fossilized momi shells.

All these shells are found on the small beach within the Kawaihae small boat harbor, which is in the planning by the state, to be improved. These columbellids are found on the rocks in tidepools in shallow waters on reefs.

Mitrella Margarita (Reeve 1859) These shells, 10mm in length, are ovate, smooth, and shining. They are ivory stained with yellow-brown lineations and freckles, often with a spiral of white and brown below the suture. These shells live deeper in the water than *Euplica Varians* and *Anachis Miser*.

Family Architectonicidae

Architectonicids are lowspired shells - the whorls coiled on a wide axis, and the umbilicus is often open all the way to the apex. Architectonicids feed on corals and sea anemones.

Helicacis variegatus (Gmelin, 1791). The shells, are about 12 mm in diameter and 9 mm in length, are turbiniform, with inflated, convex whorls spirally sculptured by small granules, and variegated brown and black. The Hawaiian word for these shells is Kauno'o. The kauno'o shell is used at the ends of shell leis. It is beautiful and intricate designs are an elegant feature. These shells are found frequently at Kawaihae small

boat harbor.

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Family Melampididae

The *melampids* are *pulmonates*, found high along the shoreline where they are beyond the reach of the tides, but within the reach of sea spray.

Melampus castaneus (Muhlfield, 1816) These shells are about 13 mm

in length and 7 mm in diameter, are ovate, the last whorl the largest and the spire short, smooth, and dark brown. This shell is known by the Hawaiians as poleho or night cowry. They are frequently found at Kawaihae small boat harbor. Poleho are used to end the shell leis.

Family Pectinidae

The pectins, or scallops, comprise a large group of bivalves, which are most abundant and attain their largest size in temperate waters. Pectin shells are more or less circular in outline with a straight line of the hinge. The right valve is usually identified by a notch through which the byssus passes.

In some species the two valves of the shell are similar (equivalve); in others the two valves is usually radially ridged and often tinted with bright colors.

These shells are also found on Kawaihae small boat harbor.

Chlamys irregularis (Sowerby, 1842) The valves often more than 30 mm in height and 27 mm in diameter; are subcircular, thin barely inflated, and inequivalve. They are white and yellow with red and brown blotches. These shells are found at depths

of 12 to 150 m.

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Haumea juddi (Dall, Bartsch and Rehder, 1938). In these pectins the valves, 19 mm in height and 18 mm in length, are subcircular, moderately solid, and distinctly inequivalve. The right valve is white with a reddish spot at the umbo; the left valve is mottled and banded with red brown. They are common at depths from 8 to 100 m. *Haumea juddi* was describe as native to the Hawaiian islands. *Haumea* is the name of a Hawaiian goddess famous in Hawaiian folklore.

Conclusion

In conclusion we hope you people in the u.s. Department of Transportation take into consideration our feelings of cultural values that the Hawaiian ancestors and descendants have to this day. We feel that our kupuna (ancestors) are talking to us loud and clear. They say, "Go from your na'au (where the mana is stored). The shells called by my name are like precious gems to the Hawaiian people. The right to gather them is just as precious as the gem itself. In this day and age, our people have to endure a lot of humiliation, and loss of identity purely because of the introduction of foreign people after Captain James Cook arrived in 1778. We have been grieving for the loss of our queen, rights to govern ourselves, and loss of stolen land. These shells are just as important as all that we lost. Extinction of the Island of Hawaii's species of shell harms the Hawaiian people in the same way. The loss of a recreational area, where children learn to swim, surf, and do other Hawaiian traditional practices, is highly offensive to us in the

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community on Hawaii Island.


11

So I'd like to, urge you to stop this project from harming my people anymore. I say, save the shells and our island from over population, over development. Don't pour cement over our gathering and recreational area.

In your letter to me dated February 22, 2001, your addresses to my comments in from my first letters

I find unexceptable and deceiving. All you are basically telling me is that you read my letter and you are not going to tell me what is in the EIS until it is published. I find that deceiving. Don't tell me you know the ahupua'a system and gathering rights. If you knew them you would stop your plans for the Kawaihae Harbor.

I don't even know why you sent me that letter. It does not tell me anything that I wanted to know from my first letters dated, November 29, 2000 and January 18, 2001. Please, send me letters that are worth the .34 cent stamp.


Very Sincerely, Momi Subiono
Hawaiian Studies Teacher
February 20, 2001

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May 15, 2001

Ms. Momi Subiono
HC-1 #16
Captain Cook, Hawaii 96704

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Ms. Subiono:

Thank you for your letter dated February 12, 2001 which was received by R.M. Towill Corporation on February 27, 2001, providing comments on the above-referenced Draft Environmental Impact Statement.

We appreciate the information you provided regarding the types of shells you say are found at Kawaihae Harbor. However, please note that none of the shells found on the coral stockpile are under federal protection as threatened or endangered species.

The "beach" to which you refer is a man-made pile of coral that was dredged from the immediate area to create the harbor's turning basin and piers. The dredging may have increased the opportunity for collection by creating a localized stockpile of shells. Oral histories indicate anecdotally that prior to dredging of the commercial harbor gathering along this coastline focused on collection of seafood such as mullet, crabs and limu for subsistence living. They also indicate that shell collection became popular on the coral stockpile area immediately after the harbor was dredged, but later the community lost interest.

With regard to the loss of recreational area, Kawaihae Harbor is first and foremost a commercial harbor facility. However, the DOT-Harbors Division's practice of allowing the public to use the undeveloped portions of the harbor for recreational purposes is expected to continue, subject to the same safety considerations in effect today.

With regard to "population explosion," population growth has been forecast by the County of Hawaii as shown in Table 19 on page 4-1 of the DEIS. The growth is expected to occur with or without harbor improvements at Kawaihae. In addition, economists at First Hawaiian Bank have determined that recent growth in west Hawaii

Ms. Momi Subiono
May 15, 2001
Page Two

has, in fact, not resulted in inflation of residential prices. Page 2-12 of the DEIS states: "Although the Island of Hawaii building permits are up, offshore demand for second homes in west Hawaii is not fueling a speculative market as it did in the past." Without harbor improvements the cost of living and traffic in west Hawaii could increase because more goods would have to be shipped via truck from Hilo Harbor, the only other commercial harbor on the Island of Hawaii. With regard to the "area right below Puukohala heiau," this area is outside the scope of the harbor and harbor development. Any drainage problems that may have resulted in silt deposits did not originate from Kawaihae Harbor as the harbor is "downstream" rather than "upstream" from this area.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division

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(1)

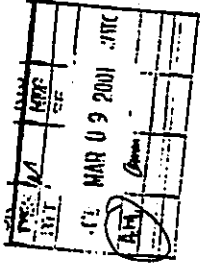
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Dear Gail Atwater and Chester Koga,

This is my next testimony. Please make sure it gets in the next EIS. The subject of the matter is Endangered Species. For your information, your Marine Biology expert who only saw one turtle their that day must not of worked very hard for the money because my husband has seen many turtles inside of Kawaihae Small Boat Harbor near the LST ramp. In one day, around 15 turtles were seen by my husband. Frollicking in the Harbors North Beach Cove.

This project threatens the well being of these turtles which by the way are my 'aumakua (ancestral guardian) as well as the shark. The females once laid there eggs along the original beaches that you destroyed. Now they have no where to lay there eggs as they need to return to the original beach that they were born at to deposit eggs of there own. What happened to the turtles grounds? I know all about the green sea turtle because I have been a teacher for five years and I taught the students all about the honu (green sea turtle), and the Honu `ea (Hawksbill turtle). From my understanding, these turtles need to have access to a beach in order to deposit there eggs. That is why you should not be allowed to pour cement over the area in question. You will be harming the only beach you have left for them to use.

This is the information I have on them. You need to thoroughly look in to these matters as soon as possible. You should've hired me to do your ocean study. I have no degree and I can do a better job. I will also send letters to the National Marine Fisheries Service, the US Fish and Wildlife Service, the Department of Land and Natural Resources on the matter. I will be expecting a letter from you soon on this. Please don't tell me that you will address my concerns on this in the next EIS. I want an answer way before that Final EIS comes out.



(2)

Information about the Hawaiian Green Sea Turtle

Scientific name: *Chelonia Mydas*

Hawaiian name: Honu

The green sea turtle is the biggest sea turtle with a hard shell. Its oval upper shell, the carapace, is dark brown and black with flecks of olive and gold; its underside is yellow-orange. The green sea turtle is not green in the outside: it gets its name from the color of its body fat. This fat was used medicinally by the Hawaiian for their art of healing called lomilomi. Males and females look very similar except the male has a longer tail. A full grown sea turtle may be 40 inches long and can weigh as much as 400 pounds. The hatchlings are about 1 1/2 inches long and weigh around 1 ounce. Hatchlings have very dark carapaces and white undersides. This kind of coloring, called countershading, is common in sea animals and makes them hard to see in the water.

Green sea turtles have long flippers and tough, scaly skin. Their eyes are black, and they have no outside ears, but they can hear. The green turtle's mouth is shaped like a parrot's beak and made of horn like material.

Habitat

Green sea turtles are ground in warm ocean waters in Hawai'i. The honu swims and feeds in the shallow waters just off the shores of the Hawaiian islands where the seaweed should be preserved and kept from pollution in order to insure the survival of the species in the area. The habitat of the honu is threatened by the Commercial Harbors Master Plan 2020.

Population

Fossils reveal that sea turtles lived 180 million years ago, when dinosaurs were still on the earth. Once tens of millions of green sea turtles lived in the oceans of the world. Today, scientist guess that there are fewer than half a million left. Only two hundred females come ashore each year in Hawai'i to nest.

(3)

Food

In the wild, the adult green sea turtle does not eat other animals. It feeds on the seaweed and sea grasses of the shallow waters near the Hawaiian Islands. The turtle has no teeth, but ridges inside its mouth enable it to grip and tear food.

Unlike the adults, the hatchlings are meat-eaters. Scientists have looked at stomach contents and think the hatchlings eat jellyfish and other small spineless animals during the time they spend in their unknown nursery in the sea.

Protection

Since 1940, all but two of the Northwestern Hawaiian Islands, where the green sea turtle nests, have been part of a National Wildlife Refuge. It is against the law to disturb any of the animals and birds that live in Kawaihae Harbor. Under the Endangered Species Act, which makes it against the law to hurt, bother, chase, hunt, shoot, wound, or kill any endangered or threatened species. Only scientist who are studying the turtles can do so under special permit.

It will be a long time before we know if these laws are working, because green sea turtles grow very slowly. They may take as long as twenty five years to grow big enough to breed! We do not know how long they live, but scientists think many of them grow very, very old.

Other Sea turtles of Hawai'i

Besides green sea turtles, there are two other kinds that live in the ocean waters of Hawai'i: the hawksbill and the leather back. Sometimes, loggerheads and olive ridley visit island waters.

The Hawksbill

The Hawksbill or Honu 'ea in Hawaiian, is smaller than the honu, its head is more narrow, and it has sharp beak. Its main food is sponges. Which may be also in the harbor and are threatened by the 2020 Master plan for Kawaihae Commercial Boat Harbor. The hawksbill's upper shell is dark brown with yellow and reddish streaks and is prized for its high gloss shine and have been use throughout Polynesia by native people for combs and other jewelry. It is thought that the meat of the Honu 'ea is poisonous, depending on what it has eaten. Very small numbers of this turtle nest on Hawai'i and Moloka'i, where the eggs and hatchlings are at the mercy of developments, dogs, cats, and mongooses. The hawksbill is an endangered species and scientists fear it will soon be extinct in Hawai'i if the State is allowed to go through with it's Master Plan 2020.

In Conclusion,

My father was given a gift of a stuffed honu 'ea a very long time ago on a trip to Palau. I have this gift now at my home. I have used it countless time for educational purposes. It is one of our family heirlooms. I feel privileged to have one especially one given as a gift.

In the olden days the Hawaiian deified there ancestors. I feel the honu is my ancestor. An 'aumakua is an animal, plant or element of nature believed to be a spirit of a deceased ancestor who is still on earth and watching over us. The honu has been my 'aumakua since I was born. I am obligated to protect them by ancestral significance. Stop the project now. Save my ancestors.

Sincerely, Momi Subiono

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Ms. Momi Subiono
May 15, 2001
Page Two

May 15, 2001

Ms. Momi Subiono
HC-1 #16
Captain Cook, Hawaii 96704

Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement

Dear Ms. Subiono:

Thank you for your undated letter which was received by our office on March 9, 2001 with regard to the above-reference Draft Environmental Impact Statement (DEIS).

With regard to your comments on endangered species, the DEIS discloses that the marine biologist surveying the area observed a threatened green sea turtle *Chelonia mydas* in Kawaihae Harbor. These turtles currently coexist with commercial shipping and pleasure boating activities in the harbor without incident. In addition, the DEIS contains specific information about how any threat to the safety of these turtles will be mitigated during construction activities. The DEIS states, "Because of the occasional presence of a threatened species within both harbors, Harbors Division will maintain close coordination with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service during project planning and construction. The threatened green sea turtle will be protected from dredging and pier construction activities through the use of at least one siltation curtain at each harbor location. The flexible fabric curtain will create a barrier from construction, preventing the turtles from entering an area of potential harm."

Green sea turtles cannot lay their eggs on the coral stockpile because it is not a sand beach. Further, Kawaihae Harbor is not known as a habitat for the green sea turtle. With regard to hawksbill turtles, our marine biology consultants, AECOS, Inc., inform us that hawksbill turtles are very rarely found in the harbor.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division

SEARCHED	INDEXED	SERIALIZED	FILED
MAR 16 2001			
SHTC			
(P) 1191.1			

TO: Mr. Glenn Soma
 Department of Transportation

SUBJECT: Hawaii Commercial Harbors
 2020 Master Plan
 Draft Environmental Impact Statement

Thank you for the opportunity to review the Hawaii Commercial Harbors 2020 Master Plan Draft Environmental Impact Statement.

This project does not impact any Department of Accounting and General Services projects or existing facilities. Therefore, we have no comments to offer.

Should you have any questions, please have your staff call Mr. Allen Yamanoha of the Planning Branch at 586-0488.

Gordon Matsuoka

GORDON MATSUOKA
 Public Works Administrator

AY:mo
 c: R.M. Towill Corporation
 Office of Environmental Quality Control

DOCUMENT CAPTURED AS RECEIVED

Liz De Roche
Box 247
Hawi, HI 96719
March 15, 2001

State Department of Transportation
Harbors Division
79 Southimitz Highway
Honolulu, Hawaii 96813

Attention: Glenn Soma

Regarding: Hawaii Commercial Harbors 2020 Master Plan Kawaihae

Dear Mr. Soma,

As a concerned citizen of Hawaii County I request the Department of Transportation schedule two public informational hearings, one in Kawaihae and one in North Kohala, no later than March 30, 2001 so that the residents of this area can hear about the proposed development of Kawaihae Harbor and voice their opinion.

You told Momi Subiono that there had been several public meetings about this plan. According to Table 21 (Page 7-9) of the DEIS the only public informational meeting about Kawaihae Harbor was held on June 17, 1996 at the Keshole-Kona Airport. That is hardly sufficient to provide the public with the information they are entitled to considering the magnitude of the proposed project.

I believe your department is attempting to sidestep this project through without public awareness. If this is the case you are sadly mistaken because I intend to do everything possible to make everyone aware of it. What you are attempting to do is a potential environmental disaster and a violation of Hawaiian Rights.

I enclosed you will find my initial comments on the DEIS. I want an immediate written response to them.

Sincerely,

Liz De Roche

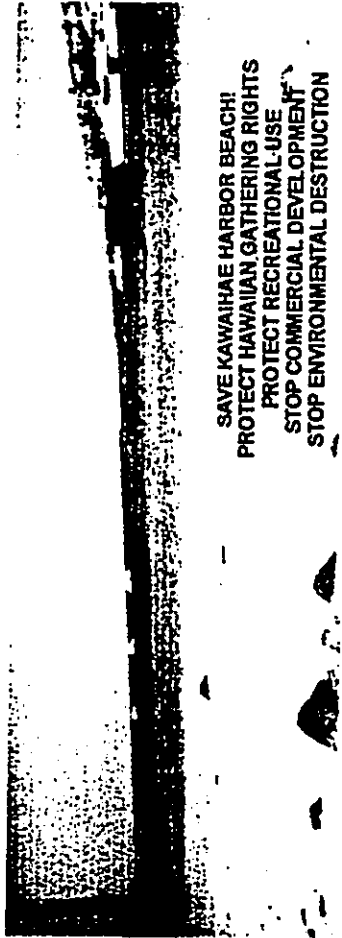
Cc:

Nancy Heinrich
Office of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, Hawaii 96813

R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817-4941

Chris Yuen, Planning Director
County of Hawaii Planning Dept.
25 Auauhi Street
Hilo, HI 96720

DATE	FILE	PREP
REC'D	MAR 13 2001	RMIC
		APR



SAVE KAWAIHAE HARBOR BEACH
 PROTECT HAWAIIAN GATHERING RIGHTS
 PROTECT RECREATIONAL-USE
 STOP COMMERCIAL DEVELOPMENT
 STOP ENVIRONMENTAL DESTRUCTION

March 11, 2001

COMMENTS CONCERNING DEIS FOR HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN

1. A current comprehensive cultural assessment of the Kawaihae region was not prepared. Conclusions were drawn from Archeological Survey and Testing, Kawaihae 1 (Kamohana), South Kona, Hawaii. (Cultural Surveys Hawaii, Revised, 1991.) and an oral history account taken in January 2001 from Mr. John Keoala Lake. Kawaihae Harbor is not even in Kamohana (Kawaihae 1) Ahupua'a. It is in Hikuina Ahupua'a (Kawaihae 2). Contemporary cultural uses of the area were not considered. This area is the last available beach for shell gathering on the island of Hawaii. It is a fishing area. It is home to Pua Kaiima O' Kawaihae. It is the only recreational beach where families and pets can go without the regulations imposed by state parks and without the scrutiny of resorts and tourists.

2. The proposed development is an illegal use of ceded lands. Section 5 of the Admissions Act states "the provision of lands for public use." This development would eliminate all public use.

3. The building of Liquid Bulk Storage (aka petroleum) and subsequent transfer of such materials is an environmental hazard that would endanger marine life. On the map, which accompanied the initial EIS, liquid bulk storage was indicated on the Pelekane Lands. Now they say it will be on an adjoining area but it looks to me like they have moved the boundary of the Pelekane Lands.

4. Page 4-12 Cooperative Agreement No. H-98-8, currently in force between the United States Department of the Interior, National Park Service and the Harbors Division, provides that the so-called Pelekane Lands are to be used as a state-owned "buffer zone that separates the archaeological significant Puukohola Heiau National Historic Site from the commercial harbor area. The Pelekane Lands are on ceded land not state land!

5. The marine biology study complete September 2000 by AECOS is incomplete and improperly done. Spending a Saturday and Sunday at the beach doesn't constitute a proper study. This is quite evident in the fact they reported only one Green Sea Turtle when there is a large number of them in the harbor. They didn't report anything about the fact the harbor is a nursery area for Hammerhead Sharks. There are numerous invertebrates present in the harbor that are not on their list.

6. The report contradicts itself in several areas. Example:

Page 4-18 Potential Impact on Social Environment

"Further, recreational practices are not planned to be curtailed from currents levels at either harbor under the 2020 Master Plan."

COMMENTS TO COMMERCIAL HARBORS 2020 MASTER PLAN
 SUBMITTED BY LIZ DE ROCHE BOX 247 HAWAII HI 96719 869 5372



Page 10-1 at Kawaihae Harbor, recreational uses of the area proposed for Piers 3, 4 and 5 would be curtailed in the short-term during construction and eliminated in the long-term, with the exception of fishing off the piers.

7. Glen Soma, Harbor Planner, DOT, told Momi Subiono that there had been several public meetings about this plan. According to Table 21 (Page 7-9) of the DEIS the only public information meeting about Kawaihae Harbor was held on June 17, 1998 at the Keahole-Kona Airport. Although public information meetings are not required at this point, they may be requested and this should be done immediately. Requests must be submitted to Glen Soma. No one knows what is being planned for Kawaihae Harbor. Everyone Momi Subiono and I have contacted is totally opposed to the development. This is evident in the ten pages of signed petitions Momi and her husband collected this past weekend (March 10 and 11).

8. Work is already underway at Kawaihae Harbor until the guise of "repair and maintenance". This must be stopped before any further damage is done. They have already bulldozed the Makuhuna Gulch outlet to the fisheries area so it can no longer drain into the harbor. There are huge accumulations (piles over 15 feet high) of refuse, primarily car bodies, on the Pelekane lands. Pile diving is being done adjacent to the LST landing.

420 Wai'anae Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
eMail rmt@owill.com



R. M. TOWILL CORPORATION
SINCE 1930

Planning
Engineering
Environmental Services
Photogrammetry
Surveying
Construction Management

Ms. Liz DeRoche
May 15, 2001
Page Two

May 15, 2001

Ms. Liz DeRoche
Box 247
Hawi, Hawaii 96719

Hawaii Commercial Harbors 2020 Master Plan Kawaihae
Draft Environmental Impact Statement (DEIS)

Dear Ms. DeRoche:

Thank you for your letter dated March 15, 2001 in which you provided a cover letter and attached comments on the Hawaii Commercial Harbors 2020 Master Plan Draft Environmental Impact Statement.

With regard to your cover letter dated March 15, 2001, the Hawaii Commercial Harbor 2020 Master Plan was developed with harbor user and community input in an open and inclusive manner as described in the DEIS, Table 21. Eleven stakeholder meetings and two public information meetings were conducted to produce a collaborative plan.

The following are responses to your "Comments Concerning DEIS for Hawaii Commercial Harbors 2020 Master Plan," dated March 15, 2001.

Item #1. "Comments Concerning DEIS for Hawaii Commercial Harbors 2020 Master Plan"

Your comments indicated that a current comprehensive cultural assessment of the Kawaihae region was not prepared. The DEIS follows the Office of Environmental Quality Control's "Guidelines for Assessing Cultural Impacts", adopted by the Environmental Council, State of Hawaii, November 19, 1997. The report, Archaeological Survey and Testing, Kawaihae I (Kamohana), South Kona, Hawaii, was referenced because a) the Guidelines for Assessing Cultural Impacts encourage looking at an area "greater than the area over which the proposed action will take place" and b) the document contained important information specifically about the Kawaihae Harbor area, including numerous oral histories. Contemporary uses of the harbor area such as shell gathering, surfing, swimming and recreational beach use were all acknowledged and

addressed in the DEIS. Please also keep in mind that the undeveloped coastline within Kawaihae Harbor is not a beach, rather than a stockpile of coral dredging materials deposited near the coastline when the harbor was created.

Item #2. "Comments Concerning DEIS for Hawaii Commercial Harbors 2020 Master Plan"

You state that "the proposed development is an illegal use of ceded lands." As a State of Hawaii agency, the Department of Transportation may rightfully develop the harbor area for public use. Public use is interpreted to mean use of lands for the public good, including provision of essential infrastructure for the State of Hawaii. Harbors Division pays for the use of ceded lands. Use of the area by the public for recreational purposes is not expected to be eliminated, rather it is expected to continue as today in undeveloped areas of the commercial harbor, with safety as the prime consideration in limiting use during certain harbor operations. The U.S. Army Corps of Engineers will continue to require that access to the shoreline and breakwater be maintained.

Item #3. "Comments Concerning DEIS for Hawaii Commercial Harbors 2020 Master Plan"

You state that "the building of Liquid Bulk Storage (aka petroleum) and subsequent transfer of such materials is an environmental hazard that would endanger marine life." Please be assured that construction of liquid bulk facilities will meet all current safety and environmental requirements, which are more stringent than ever before. You also state that "it looks to me like they have moved the boundary of the Pelekane lands." The boundary of the Pelekane Lands has not moved or changed from the specific area under Cooperative Agreement H-98-8.

Item #4. "Comments Concerning DEIS for Hawaii Commercial Harbors 2020 Master Plan"

You state that "the so-called Pelekane lands are to be used as a state-owned 'huffer zone that separates the archaeological [sic] Puukohala Heiau National Historic Site from the commercial harbor area. The Pelekane Lands are on ceded land not state land." According to records in the Harbors Division Real Estate Division, the Pelekane lands are outside the boundary of ceded lands within the harbor. This is illustrated in the DEIS in Figure 28 on page 4-30.

Item #5. "Comments Concerning DEIS for Hawaii Commercial Harbors 2020 Master Plan"

We respectfully disagree with your comment that "the marine biology study completed in September 2000 by AECOS is incomplete and improperly done." During the marine biology survey, no specific attempt was made to assess the actual numbers of green sea turtles using the harbor. The fact that divers failed to see more than one is perhaps not

Ms. Liz DeRoche
May 15, 2001
Page Three

surprising as the turtles might avoid divers or the numbers may not be constantly "large" but variable from day to day. More turtles might regularly enter the harbor in the evening hours after the survey divers had left. If others have seen many turtles in the harbor on occasion, that is valuable information, but does not mean that everyone who goes to the harbor will have exactly the same experience every time. Further, there is no evidence that turtles ever used the beaches along this area for nesting in modern times. Unfortunately, no beach in this area today would be attractive to turtles for nesting purposes.

With regard to your comment "They [the marine biology consultant, AECOS, Inc.] didn't report anything about the fact the harbor is a nursery area for Hammerhead Sharks," AECOS responds as follows: "We have not heard before that the harbor is a nursery for hammerhead sharks. It is possible that because the harbor provides sheltered conditions along a coast with few large bays, juvenile hammerheads are attracted here. It is unlikely that the proposed changes would alter conditions sufficiently to reduce use of the harbor's waters by either turtles or sharks. In addition, harbor resources most attractive to these marine creatures are going to be along the outer margin of the harbor."

With regard to your comment "There are numerous invertebrates present in the harbor that are not on their [AECOS'] list," we acknowledge that the AECOS study did not report every invertebrate species present in the harbor. It focused on characterizing the kinds of benthic communities present as indicated by the more obvious creatures living there, emphasizing those areas designated to undergo the greatest physical alterations under the Hawaii Commercial Harbors 2020 Master Plan.

Item #6. "Comments Concerning DEIS for Hawaii Commercial Harbors 2020 Master Plan"

You state "the report contradicts itself in several areas" citing comments on pages 4-18 and 10-1. Kawaihae Harbor is today and will continue to be a commercial harbor in which certain recreational uses are permitted. With the proposed development recreational activities such as swimming will not be able to occur where new piers will be constructed, but are expected to continue in the undeveloped areas of the harbor, according to Harbors Division. Recreational fishing will be able to continue in the undeveloped areas as well as on the new piers, subject to the same safety considerations in effect today. Please also note that the fisheries area remains on the map of proposed improvements to the harbor (Figure 9, page 2-21 of the DEIS).

Item #7. "Comments Concerning DEIS for Hawaii Commercial Harbors 2020 Master Plan" With regard to your comments on public meetings, the Harbors Division conducted meetings with the public for more than one year during the development of the Hawaii Commercial Harbors 2020 Master Plan. Prior to the public meetings held on June 10 and June 17, 1998, press releases were sent on May 22, 1998 from the

Ms. Liz DeRoche
May 15, 2001
Page Four

Department of Transportation to West Hawaii Today, the Hawaii Tribune, Honolulu Advertiser Big Island, KPOA, KIPA, Honolulu Advertiser and Star-Bulletin. The press release contained the following announcement: "The draft Hawaii Commercial Harbors 2020 Master Plan is a joint effort by the harbor users, other private and public agencies, and concerned citizens. This Task Force has worked for a year to develop the draft plans for Hilo and Kawaihae Harbors that accommodate the essential, commercial maritime industries - interisland, overseas, liquid and dry bulk cargo, passenger, and fishing."

In addition, since December 2000 there have been two public comment periods totaling 75 days (30 days for the Environmental Impact Statement Preparation Notice and 45 days for the Draft Environmental Impact Statement). Copies of the EISP and DEIS were sent to stakeholders involved in the harbor planning process as well as other interested parties, including yourself. Further, copies of the DEIS were provided to local newspapers West Hawaii Today and Hawaii Tribune Herald. Articles appeared in West Hawaii Today on March 13 and April 12 concerning the Hawaii Commercial Harbors Master Plan, further informing the public of the Island of Hawaii about the development plans.

Item #8. "Comments Concerning DEIS for Hawaii Commercial Harbors 2020 Master Plan" Regarding your comment that "work is already underway at Kawaihae Harbor under the guise of 'repair and maintenance'", the Harbormaster of Kawaihae Harbor provided the following information. Harbors Division is not aware of any bulldozing being done except where grading is being done to pave the former bulk sugar area, which is well away from the water. The car bodies are believed to be among other scrap metal items being consolidated on the coral stockpile area prior to shipment. The work being done at Kawaihae Harbor is the replacement of a mooring dolphin by the Army of the Army's LST Ramp. One of their vessels damaged the outermost dolphin and it requires replacement which involves pile-driving.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division

01.0947
DIRECTIONS OFFICE
DEPT. OF
TRANSPORTATION

DM-363
01.1000

DIRECTOR'S OFFICE
DEPT. OF
TRANSPORTATION
Momi Subiono
89-709 Lani Kona Rd. Mar 15 11 48 AM '01
CC, HI 96704
(808) 328-8939

State Of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097
Attention:
Glenn Soma
Brian Mimaai

Aloha,

Enclosed is the petitions we have gotten signed so far. There is alot more to come. Any other petitions you are sent should go in the final Environmental Impact Statement. All these people were at the surf meet this weekend at Kawaihae. They "all" were shocked, horrified and upset about the whole Master Plan for Kawaihae 2020 and not one said they were for it. They want to be informed when you finally do decide to have public hearings on it. They demand that you do so. We are turning this and any other petitions you receive, as testimony the voice of the people. Every single able adult there signed. Mr. Soma this is the voice of the Community of the Island of Hawaii. The people want the Master plan 2020 for Kawaihae Harbor killed. It is that simple. We want dirt brought in and trees and grass planted on the premises. We all demand you to put the garbage can back and add more. Every one of these people no matter where they are from feel strongly that you should keep Kawaihae LST ramp as a recreational area. The only improvements we want on the area is for you to make the area in it's entirety, an Eternal Community Park. Everyone of these people said, "No way! This is our Beach!" "They can't take it away! They all expressed ownership to the whole area. You will be receiving more petitions. The Community is speaking out. We want the whole area turned into a Park.

Very Sincerely
Momi Subiono
Momi Subiono

Reasons for opposing the development of Kawaihae Harbor 2020

- 1.) The ecosystem will be threatened by the extra pollution brought in to the area by bigger boat traffic emitting more gas and oil into the water.
- 2.) Population explosion on the island will be encouraged by the harbor, and the "developments" the harbor will support. (In fact, land development is land usage). Examples, Keolu (Hokuli'i) Kona, Hawaii.
- 3.) The new jobs will not go to the Hawaii residents of Hawaii. The new positions will be filled largely by employees of the large corporations which they will import from elsewhere.
- 4.) The new housing and new towns will drive up property values and property taxes and higher prices. This pattern has occurred many times elsewhere. Examples, Vallarta, Spain, Coronado, Oahu.
- 5.) The quality of life in Hawaii will be rapidly degraded by the new highways, and storage areas, housing the new harbor.
- 6.) The harbor will help large corporations become richer. It will not help the people of Hawaii. It will not stop inflation of products.
- 7.) The project will harm Hawaiians who gather and use the area for historical, recreational, fishing and gathering in the area.
- 8.) The archeological sites will be threaten by any development in the area as proven in the past.
 - A.) Extra dirt created with the first development in the area that has killed all the coral reefs in the Kawaihae area on Hale o Kapuni which they cannot find (no) reefs in the area. This shark heliau is very significant to the Hawaiian people and we do not want anymore damaging development in the area.
 - B.) Harm to the grasses in the area across the street from the proposed development.
 - C.) Buffer for Pu'uhonohu (The Pelekane Lands) will be used as liquid storage and will no longer be a buffer putting the heliau at risk of development damage.

1808 587 2504

4-9-01: 8:48AM: HARBORS DIVISION

4/29

1808 587 2504

4-9-01: 8:48AM: HARBORS DIVISION

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

- | # | Name | Address | Phone # |
|-----|-------------------|-------------------------------------|------------------------------|
| 1) | Thomas ODEM | P.O. Box 1367 PAHOA, HI | 982-8086 |
| 2) | Kyle Rogers | P.O. Box 1936 PAHOA HI | 977-5953 |
| 3) | Wally TAVARES | HCR 3 BOX 13521 KAILUA HI | 966-4029 |
| 4) | Nicole Montalvo | 411 Huala Pl Hilo HI | 935-0704 |
| 5) | Paul J. MACIAZ | 101 PUAKO BEACH DR, KAMUELA HI | 882-4661 |
| 6) | Jam McPadden | RR2 Box 4041 PAHOA, HI 96798 | 965-8127 |
| 7) | JENNIFER WILLIAMS | " " | " " |
| 8) | Chris Granda | 188 Hale St. #46 Hilo HI 96720 | 961-5154 961-5154 |
| 9) | Cora Rillud | " " " " " " " " | 961-3169 |
| 10) | MEL BELKA | 74783 UHUA'OA ST. KAILUA KONA 96740 | 779-1400 |
| 11) | Monique Edwards | POB 1375 KAMUELA HI 96743 | |
| 12) | Roy Stewart | P.O. Box 44916 KAWAIIHAE HI | 882-1077 |
| 13) | MARK D AYERS | 683776 Lailua Pl Wailuku | 883-8227 |

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

- | # | Name | Address | Phone # |
|-----|-----------------|-------------------------|----------------|
| 1) | Bullet W. Obra | Kamuela | 882-2521 |
| 2) | PENE' E BALANCA | | |
| 3) | RUI BALANCA | | |
| 4) | ALANI BALANCA | 11-B Puako Beach Dr | 982-1620 |
| 5) | MING BALANCA | Kamuela HI | |
| 6) | Donald Bois | 584045 Wailuku HI | 96738 883-8408 |
| 7) | Melissa Kaupika | " " | " " |
| 8) | Tennille Howard | 11-A Puako Beach Dr | 882-1017 |
| 9) | Nikki Howard | Kamuela HI | 96738 |
| 10) | Arthur Howard | PO. Box 2190 Kamuela HI | 96738 870-2553 |
| 11) | Shantel Abonci | 11-B Puako Beach Dr | " " 96743 |
| 12) | Shila Abonci | " " " | 882-1017 |
| 13) | Paul Crane | P.O. Box 3249 Kona HI | 96745 |

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

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#	Name	Address	Phone #
1)	CHRISTOPHER YOUNG		
2)	JILLIA YOUNG	73-478 MAHONO RD K-Kina HI 96740	3257436
3)	CAMERON YOUNG		
4)	JUN BALANGA	PO BOX 405111 KAMUELA 96743	8874617
5)	JAYME LEBUE	PO BOX 442 CAPT COOK 9222894	
6)	EDSON WALK	PO BOX 657 HONOKAA 96727	775-9726
7)	JARON ABRAN	P.O. Box 761 HONOKAA 96727	936-7287
8)	KARY KELLER	P.O. BOX 691 KAPAAU, HI 96755	885-5000
9)	DENNIS MCKENNA	PO BOX 4464, KAMUELA, HI 96743	936-4505
10)	BUFF WILLARD	BOX 396 HAWI, HI 96719	889 0288
11)	BOWPY CAMPBELL	BOX 744, KAMUELA, HI 96743	
12)	CINDY OSWALD	BOX 912 KAMUELA HI 96743	
	KICK JOHNSON	Geartol, KAMUELA HI 96743	

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

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#	Name	Address	Phone #
1)	ROSEMARY ALVES	PO BOX 1430, KAMUELA HI 96743	808 775 9000
2)	Patricia Owen	POB 135, Hawaii	96719
3)	Robert Young	P.O. Box 190 506, Hawaii	96719
4)	June St. John	P.O. Box 527 Honokaa HI 96727	
5)	KAIKI GUNDERSON	P.O. Box 243 Kamuela, HI 96743	#885-5390
6)	NOHEA MASAOKA	PO BOX 765 Keenan HI 96740	#965 8952
7)	AUROA MISTERO	P.O. BOX 1450 PAHOA HI 96778	#965-489513
8)	KAREN MINTO	P.O. BOX 1450 PAHOA 96778	965-489513
9)	Grant A. Tigander	34B Lele St Hib, Hawaii	96720
10)	Theresa J. Perry	P.O. Box 691 Pahoa 96778	915-1674
11)	David Fushinini	P.O. Box 853	
12)	Utterly Erasmus	P.O. Box 1240 PAHOA, HI 96778	
	Debra J.	PO. Box 724 VOLCANO HI 96785	

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

808 587 2504

9-01: 81-8AM: HARBORS DIVISION

9/28

808 587 2504

9-01: 81-8AM: HARBORS DIVISION

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
1)	Dorcas Rene Leliedrid-Ahu	RE 3 Box 1122, PAHOA	982-9684
2)	Eric B. Ahu	RE 3 Box 1122, PAHOA	982-9614
3)	Myron Guev-LRO	PO Box 350 KURTZ JAWI	966-8162
4)	Jamett Enriquez	P.O. Box 691 PAHOA	965-6674
5)	Shelie Labrador	HCE 1 Box 4016, KEAWA	966-2165
6)	Likona	P.O. Box 1122, PAHOA	982-9614
7)	Tasha Nikau-Lindsay	PO Box 1 KAMUELA, HI	885-4632
8)	Garren Lindsay	P.O. Box 6643 KAMUELA, HI	985-8100
9)	Isaiah Lindsay	P.O. Box 2602 KAMUELA, HI	895-9385
10)	Betsy Lindsay	P.O. Box 84 KAMUELA, HI	895-7510
11)	Kili Bull	P.O. Box	880-1273
12)	KAIKA WAKINEKONA	PO Box 472 KAMUELA HI	96743 9876114
13)	EZEKIEL R.H. WAKINEKONA JR	PO Box 472 KAMUELA HI	96743 9878114

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
1)	Satt Tiatson	135 Puako Beach Dr. Kamuela HI	96743 (808) 882-1165
2)	Carol Stennet	Box 2573 KAMUELA HI	96743 865-887-1444
3)	Jane Heinze	22 Kounihae Village Kamuela HI	96743 882-7733
4)	Oliver A. Lopez	64651 Pua Noho Kamuela	96743 885-1663
5)	Robyn K. Pascaia	PO Box 888 PAHOA, HI	96728 965-5092
6)	Holly Crane	PO Box 4096 Kailua-Kona, HI	96745 334801
7)	Chris Balagan	P.O. Box 4096 KAILUA KONA, HI	96745 33492
8)	John Morrison	17 PUAKO BEACH KAMUELA HI	96743 8827544
9)	Elisavete Crane	P.O. Box 4096 Kailua-Kona HI	96745 334-9201
10)	Robin B Williams	15-2681 Kumu St. PAHOA, HI	96728 965-8324
11)	Sydetta Kalan	11-B Puako Beach Dr. Kamuela HI	96743
12)	Maka Kalan	same as above	
13)	DANNY MALIGEO	P.O. Box 3162 KAILUA-KONA	96745 322-9368

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

1808 587 2504

4-9-01: 818AM: HARBORS DIVISION

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
1)	TAMIKO KANERO	P.O. Box 1648 Pahoa, HI 96778	966-8162
2)	Noelle Hall	P.O. Box 1079 Kapaa HI 96107	899-8992
3)	SHAWN McVEIGH	62-1703 Akaka Rd	895-2436
4)	Bob Black	P.O. Box 44314 Kapaeha	882-7816
5)	Larry Davis	1271A Makua St Hilo 96720	981-0496
6)	Bill Malen <i>Not by me</i>	PO Box 2261 Kamuela 96743	865-1717*
7)	PATRICK GAWLEY	P.O. Box 2422 KAMUELA 96743	775-0640
8)	Jeanette Martin	P.O. Box 100545 HAWAII HI 96749	887-1282*
9)	<i>[Signature]</i>	P.O. Box 234 HAWAII HI 96719	889-0121
10)	<i>[Signature]</i>	POB 190545 HAWAII HI	
11)	CHUCK STONE	P.O. Box 412 KAMUELA HI	
12)	Michelle Busquet	PO Box 383708 Waikoloa	883-4485
13)	LYNSEY MARTIN	90 POHAKULANI ST. HILO, HI	981-0730

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

10/29

1808 587 2504

4-9-01: 818AM: HARBORS DIVISION

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
	Daitra Ayers	65-3776 Laula Pl Waikoloa 96738	883 5227
	Brian K. Cox	P.O. Box 2574 Kamuela 96743	882-4444
	M. Strahan	Box 1904 Kamuela HI 96743	
	Esther Okada	Box 246 Kamuela 96743	
	Maurie K. Pauli	P.O. Box 384802 Waikoloa HI 96738	
	Tammy Meyer	P.O. Box 1512 Honokaa HI 96727	
	<i>[Signature]</i>	Box 5282 Honokaa HI 96727	982 2818
	N. Kuhns	Box 1701 Honokaa, HI 96727	988-3231
	L. English	Box 1701 Honokaa, HI 96727	938-3403

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

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808 587 2500

6188AM:HARBORS DIVISION

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
1)	AUSTON LATIMER	48-1558 PUHANA AVE. MILWAU	808 328 9529
2)	BILL CYR	48-1558 PUHANA AVE MILWAU	
3)	Susan E. Ouy	88-1558 Ahala Ave Milaki	808-328-8713
4)	Jim Lynam	69-11334 H Kawaihae Rd Kamele	808-882-4632
5)	Conrado Mercado	P.O. Box 1787 Kamele HI 96743	808-882-4629
6)	KAIPO YOUNG	480 " " "	4618
7)	MIRIAM VENTURA	P.O. BOX 5142 HAWAII HI 96721	775-8276
8)			
9)			
10)			
11)			
12)			

Please send all petitions to the State of Hawai'i, Department of Transportation, 869 Punchbowl St. Honolulu, Hawai'i 96813-3097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

We the people of the island of Hawaii, we hereby oppose the development of a big harbor. Kawaihae small boat harbor. We recognize the cultural significance of the area and we do not want our right to gather and use the area (in its entirety) taken away. Attached we have more reasons why we "oppose" any development in the harbor.

#	Name	Address	Phone #
	Micava Aming	P.O. BOX 6288 KAMUEHA HI 96743	885-7505
	Ekle Estel Spring Quirele	P.O. BOX 104 KAMUEHA HI 96743	885-6153
	Alfred Kuddele	P.O. BOX 28 KAMUEHA HI 96743	885-6153
	Evad Keolanakia	P.O. BOX 216 " " "	885-4537
	Kuaka K. Papan	P.O. BOX 7385 KAMUEHA	885-6864
	Gail Souce Sava	73-1381 Kaiminani Dr. K.K. 96744	325-6251
	Alana P. Poo	P.O. BOX 251 KAMUEHA HI 96743	885-6430
	Margaret Spencer	" " 223 " "	885-4019
	Jeff W. Face	" " 1469 Kamueha	885-3452
	Walter H. Lindsey	P.O. BOX 7672 KAMUEHA HI 96743	885-4091
	Joe H. Kihō	P.O. BOX 393 HONOLULU	328-7107
	Earl N. Bell	P.O. BOX 2301 KAMUEHA HI 96743	885-4091
	Jane P. Olson	64-1043 Lualilo ST - K.H.I. 96743	885-7995
	Doris M. Johnson-Purdy	P.O. BOX 2996 KAMUEHA HI 96743	885-6829
	Martin Purdy Sr.	P.O. BOX 2996 KAMUEHA HI 96743	885-6829
	Mahina Kakaikali	P.O. BOX 6185 " " 96743	885-0626
	Thomas P. Wessitt	P.O. BOX 6185 " " "	885-0626
	ALLEN H. LINDSEY	65-1819 Ho. K. 410 Rd	885-4114
	Kenia P. Murphy	P.O. BOX 181 KAMUEHA HI 96743	885-7537
	Penette K. Hodgson	P.O. BOX 791 KAMUEHA HI 96743	890-2313

Please send all petitions to State Of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-8097 or call Momi Subiono 328-8939

are signatures of people from Waimea who oppose the State of Hawaii enlarging the harbor here at Kawaihae, Hawaii

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400 Waialae Road
Suite 411
Honolulu, Hawaii 96817-4911
Telephone 808 542 1133
Fax 808 542 1937
eMail rmt@towill.com



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Ms. Momi Subiono
May 15, 2001
Page Two

With regard to the attachment to the petition, "Reasons for Opposing Development of Kawaihae Harbor," DOT Harbors Division has the following comments. Points are numbered in the same manner as on the attachment.

"1) The ecosystem will be threatened by the extra pollution brought in to the area by bigger boat traffic emitting more gas and oil into the harbor."

The DEIS discloses that over time the harbor benthic communities are likely to more closely resemble those of other harbor areas. However, even after almost 40 years of commercial harbor activity, Kawaihae Harbor still more closely resembles "nearshore coastal environments than those that might be found in restricted harbors with more turbid and nutrient enriched water masses" (DEIS, page 3-27, "Marine Biology").

"2) Population explosion on the island will be encouraged by the harbor, and the "developments" the harbor will support. (In fact, land development is land spoilage). Examples, Keopu (Hokulua), Kona, Hawaii."

Population growth (DEIS, Table 19, page 4-1) is expected to occur with or without harbor development. Harbor development will enable the required goods to reach west Hawaii in a more effective and economical manner than the alternative of shipping to Hilo Harbor and transporting goods by land.

"3) The new jobs will not go to the present residents of Hawaii. The new positions will be filled largely by employees of the large corporations which they will import from elsewhere."

All Harbors Division employees will be hired in accordance with State of Hawaii equal employment opportunity hiring procedures. The Harbors Division does not interfere with or dictate the hiring practices of private firms.

"4) The new housing and new towns will drive up property values and property taxes and higher prices. This pattern has occurred many times elsewhere. Examples, Vail and Aspen, Colorado, Oahu."

There is no evidence that harbor development will result in "new housing and new towns." Further, economists have stated that "offshore demand for second homes in west Hawaii is not fueling a speculative real estate market as it did in the past" (DEIS, page 2-12).

May 15, 2001

Ms. Momi Subiono
89-709 Lani koma Road
Captain Cook, Hawaii 96704

Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement

Dear Ms. Subiono:

Thank you for your undated letter which was received on March 15, by the Director's Office, Department of Transportation, in which you provided comments on the above-referenced Draft Environmental Impact Statement (DEIS). This letter also responds to the facsimile received in the DOT Director's Office on March 2, 2001 that contained the same petition form and a cover sheet entitled "Reasons for Opposing Development of Kawaihae Harbor."

With regard to public hearings, DOT-Harbors Division carried on an open, collaborative public process for over one year during the development of the Hawaii Commercial Harbors 2020 Master Plan. Harbors Division also conducted two public meetings on June 10 and June 17, 1998 to discuss the proposed plan before it was approved by major harbor users and the Governor of Hawaii. Proceedings of these meetings are summarized in the DEIS in Table 21 on pages 7-9 through 7-11. Prior to the public meetings held press releases were sent on May 22, 1998 from the Department of Transportation to West Hawaii Today, the Hawaii Tribune, Honolulu Advertiser Big Island, KPIJA, KIPA, Honolulu Advertiser and Star-Bulletin. The press release contained the following announcement: "The draft Hawaii Commercial Harbors 2020 Master Plan is a joint effort by the harbor users, other private and public agencies, and concerned citizens. This Task Force has worked for a year to develop the draft plans for Hilo and Kawaihae Harbors that accommodate the essential, commercial maritime industries - interisland, overseas, liquid and dry bulk cargo, passenger, and fishing."

"5) *The quality of life in Hawaii will be rapidly degraded by the new highways, and storage areas, hampering the new harbor.*"
New access roads at the harbor will be located within the commercial harbor boundaries and will improve future traffic flow into the harbor. The State of Hawaii's highway improvement program contained in its *Long Range Land Transportation Plan* will proceed independent of harbor development with the goal of improving traffic flow throughout the west Hawaii region.

"6) *The harbor will help large corporations become richer. It will not help the people of Hawaii. It will not stop inflation of products.*" Within the harbor, employees of the State of Hawaii and private sector harbor users are predominantly residents of the Island of Hawaii. What benefits them economically also benefits west Hawaii. The largest private firms using the harbor, Young Brothers and Matson, are both companies with longstanding Hawaii roots and operations and are major employers at all of Hawaii's commercial harbors. With regard to inflation, failure to expand the harbor to handle needed cargo is likely to increase inflation in west Hawaii because of the cost of transporting goods via land rather than through the harbor.

"7) *The project will harm Hawaiians who gather and use the area for historical, recreational, fishing and gathering in the area.*"

The Harbors Division has no intention of preventing public access to the undeveloped areas of the harbor's shoreline. Safety has always been and will continue to be the primary consideration in providing access. Further, the U.S. Army Corps of Engineers requires that access be provided to the commercial harbor's breakwater.

"8) *The archaeological sites will be threaten [sic] by any development in the area as proven in the past.*" A) *Extrus silt created from the first development in the area that has killed all the coral beds in the National Park area on Hale o Kapuni (which they cannot find how because of all the silt). This shark helou is very significant to the Hawaiian people and we do not want anymore [sic] damaging development in the area.* B) *Harm to the graves in the area across the street from the proposed development.* C) *Buffer for Puukohola (The Pelekane Lands) will be used as liquid storage and will no longer be a buffer putting the heiau at risk of development damage.*"

The points A), regarding Hale o Kapuni, and B), regarding graves, refer to areas that are outside the control of Harbors Division and the potential environmental impacts of this project. With regard to point C), concerning the buffer for Puukohola, this buffer area will be retained, as shown in the DEIS in Figure 22, page 4-13 of the DEIS.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner at 587-2503.

Very truly yours,

Chester T. Koga

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division



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We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

Name	Address	Phone #
1) Phil's Puaoy	42-751A Kama'ehuia Dr. Cpt. Cook	323-321-9768
2) Bridgett Horan	PO Box 778 Waialeale HI	437-8490
3) Linda Heaton	Ex 1146 Cpt Cook HI	328-8168
4) Susan A. Mayberger	85-4582 Momiama Hwy - P.O. H. 96704	328-2173
5) Julie Jensen	80-4480 Momiama Hwy HI	328-1722
6) Janice Neumann	PO Box Waialeale HI	967728
7) Lisa Seibel	PO Box Hanalei HI	96726
8) Rochelle Dougherty	P.O. Box 1413 K Kamae HI	9397904
9) Mike P. Nitz	10 Hill 12th Waialeale HI	41714 933-2615
10) [Name]	73-1084 Mahi Lani Dr. Kailua-Kona HI	96740 225-6247
11) Mike Zank	68-7727 Ehaoku St Waialeale HI	96728 328-2716
12) [Name]	68-3729 Ehaoku St Waialeale HI	96738 883-3716

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-3097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

MAR 13 2001 9AM

Momi Subiono
89-709 Lani Kona Rd.
Captain Cook, Hawai'i
96704

March 16, 2001

R.M. Towill Corporation
Attention: Gail Atwater
420 Waiakamilo Rd. Suite 411
Honolulu, Hawai'i
96817

Dear Gail,

Thank you for calling and making sure that I know you will publish all information and petitions in your Final Environmental Impact Statement (including this one).

I'm writing to you to clarify the areas of my opposition. On the phone you said you were a little confused when I mention Small Boat Harbor. Attached is a copy of the map that I got from your first EIS. I am not talking about the area near the Kawaihae Canoe Club. I am talking about the area where all our families love and enjoy. Next to the LST ramp. The whole stretch of beach between the LST ramp and the so called fishery (dead grounds due to new construction, blocked of the free flow of water).

In some statements I am referring to damage to the ecosystem done at Pelekane Beach which is stagnant and dead. Once Sharks would migrate through the area. Now, they cannot. When I talk about the Pelekane (Coded Lands) I am talking about the entire Pelekane Lands, specifically where you plan to store the petroleum and oil. I feel because of this, the ecosystem is at great risk of being damaged.

The break wall I am talking about is referring to the New Small Boat Harbor you spent millions of taxpayer dollars on. The wall is eroding and will be a money pit. You should've saved all that money and built a park in the Small Boat Harbor next to the LST ramp. Which is what I want to see done in the end of this fight.

Pua ka Ilima thinks that you will renew their lease (agreement, whatever). Can you please clarify this with me. I think they should know if you are going to let them stay. They are not on the 2020 Master Plan Improvements map. It is very easy to write in their name. Do you plan to do otherwise? Just tell me straight out. Please do not say that they need to be re-evaluated when their lease is up because the DOT wants to bring heavy equipment into the Harbor posing a threat to human life. I feel that the reef and Cultural Park is a fabulous idea for our Community. I would like to see the reef and Cultural Park extended to the current area located between the LST ramp, and the fishery area. I would like to be informed on your decision. If you can't say then I think you may be trying to deceive the public.

So I am now once again, asking the Department of Transportation to stop this project now. The 2020 Master Plan for Kawaihae Harbor will destroy our right to gather, Public shoreline access, and will completely kill off the fishing grounds. I strongly feel, that the public meetings on this are highly insufficient as well as your Cultural Assessment. I find it horrifying that you plan to destroy Kawaihae Beach for the sake of Big Business and Economic Sustainability. I see no logic in destroying our Cultural and Environmental Sustainability in order to achieve Economic Sustainability. I am not willing to sacrifice our Environment for the sake of Big Business.

Very Sincerely,
Momi Subiono
Momi Subiono

470 Waialua Road
Suite 411
Hooahua Hawaii 96717-6941
Telephone 808 842 1133
Fax 808 842 1927
e-Mail rmt@hawaii.com



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Ms. Momi Subiono
May 15, 2001
Page Two

May 15, 2001

Ms. Momi Subiono
89-709 Lani Kona Road
Captain Cook, Hawaii 96704

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Ms. Subiono:

Thank you for your letter dated March 16, 2001, addressed to R.M. Towill Corporation, in which you provided comments on the above-referenced Draft Environmental Impact Statement (DEIS).

We acknowledge your request to ensure that the subject letter and other correspondence from you will be published in the Final Environmental Impact Statement for the Hawaii Commercial Harbors 2020 Master Plan.

We note that you clarified the location your "area of opposition" as the coral stockpile area near the LST ramp to the marine fishery area. Harbors Division is not aware of any construction that has "blocked the free flow of water" in the fishery area. What you call the "Pelekane Beach" is an area outside Kawaihae Harbor known as Hale o Kapuni or the submerged "shark iciau". Hawaii Commercial Harbors Master Plan improvements are on Harbors Division property in a parallel but unrelated part of the subject shoreline.

The "Pelekane lands" to which you refer are preserved in a buffer zone between Kawaihae Harbor and the Puukohola Heiau National Historic Site. The proposed liquid bulk terminal will not be located on these lands. Harbors Division acknowledges that there will be greater potential for damage to the ecosystem from a petroleum oil spill with the increased liquid bulk storage at the harbor. However, any new terminal will be designed, constructed and managed under stringent environmental guidelines that are meant to contain and prevent spills.

The Small Boat Harbor to which you refer is administered by the State of Hawaii, Department of Land and Natural Resources and is therefore out of the jurisdiction of Harbors Division.

As discussed in the DEIS on page 4-23, "Pua ka ilima" (we believe you mean Pua Kailima o Kawaihae) is a non-profit organization which supports continued access to the shoreline, particularly for surfing. This organization currently has a cooperative agreement with the Harbors Division to maintain a "cultural surf park" at the ocean shoreline within the commercial harbor. Harbors Division indicates that they currently have no reason to believe improvements under the 2020 Master Plan will alter the arrangement with Pua Kailima o Kawaihae, since activities of the organization to date have safely coexisted with harbors operations. However, as with any such arrangement, the legal agreement with Pua Kailima o Kawaihae will have to be reviewed prior to expiration.

With regard to the final paragraph of your letter, please refer to the information above and our responses to additional letters from you which will be published in the Final Environmental Impact Statement for the Hawaii Commercial Harbors 2020 Master Plan.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division

Momi Subloso
89-709 Laai kona Rd.
Captain Cook, Hawai'i
96704

State of Hawai'i
Department of Transportation
Attention: Glen Soma
869 Punchbowl St.
Honolulu, Hawai'i
96813-5097

Dear Mr. Soma and Mr. Minasi,

As always, I want this to go in the final EIS as testimony.

I just talked to Alice Akau. She grew up where the gas storage tanks are at Kawaihae Small boat Harbor. She said that before you (the DOT) and the Army Core of Engineers started the first development at Kawaihae, those shells "were" found by their family. You destroyed the first ecosystem and now you wanna destroy it again by pouring cement over the area between the LST ramp and the so called fishery. Those shells are very rarely found at Spencer Park and the small beach near Kawaihae Canoe Club. I will to everything I can to keep the Hawai'i Species of Momi shells from going totally extinct. Just because, they (Explicia Varians, Mitrella Margarita, Turbinidae, and other shells in my essay) are not on the Endangered Species List, does not mean that they are not Endangered. Your project will definitely cause these shells to go extinct. I was told by other people that their was public outcry in the past and you still went through with the Small Boat Harbor. Now there will be public outcry again. We want this project stopped and forgiven. We want the area between the LST ramp and the Fishery to be left for the public as a Eternal Community, Cultural and recreational park. I am asking you again to put the rubbish can back and add two more. I want you to get rid of the huge pile of rubbish and cars stacked up near the Pelekane Lands. I would like you at the DOT to re open that water way again so the current can flow through to Pelekane Bay. We want you to take down the new chain link fences that you put up. You are perpetuating the decreration of our ecosystem. I want an immediate response to this.

Very Sincerely,

Momi Subloso

420 Wai'anae Road
Suite 411
Honolulu, Hawaii 96817-4911
Telephone 808 842 1133
Fax 808 842 1937
eMail info@rm-towill.com



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Construction Management

Ms. Momi Subiono
May 15, 2001
Page Two

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn
Soma, Harbors Planner, at 587-2503.

May 15, 2001

Ms. Momi Subiono
89-709 Lani koma Road
Captain Cook, Hawaii 96704

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Ms. Subiono:

Thank you for your undated letter which was received by the Department of
Transportation during the period of March 9 and March 19, 2001, with regard to the
above-referenced Draft Environmental Impact Statement (DEIS).

Concerning your conversation with Alice Akau of Kawaihae, you will note William
Akau of the same family was interviewed for the oral histories summarized in the DEIS.
The possibility of tidal waves as possible Acts of God at both Kawaihae Harbor and Hilo
Harbor is disclosed in the DEIS, as well as the requirements for stringent construction
standards and containment facilities for liquid bulk facilities imposed by the
Environmental Protection Agency.

Harbors Division and the 2020 Master Plan User Group, who worked together for more
than one year to formulate the Hawaii Commercial Harbors 2020 Master Plan, also have
expressed concern for environmentally safe harbor development. The DEIS provides
information concerning ways in which harbor construction will proceed in a responsible
manner in compliance with all applicable laws and regulations.

Kawaihae Harbor is a commercial harbor. As such, the use of lands within the harbor
boundary will emphasize commercial harbor purposes rather than as a community park.
The "huge pile of rubbish and cars" is scrap metal being stored at the harbor for future
shipment. We are not familiar with a "water way" on Department of Transportation,
Harbors Division property that would flow into Pelekane Bay. The chain link fences
were placed within the harbor because of problems with loitering and vandalism by
members of the public at the harbor after dark.

Very truly yours,

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division



Momi Subiono
89-709 Lani kona Rd.
CC, HI 96704

R.M. Towill Corporation
420 Waiakamilo Rd. Ste. 411
Honolulu, HI 96817

Attention: Gail Atwater

Subject: More testimony for the Final EIS Commercial Harbors Master Plan 2020 for the island of Hawai'i
March 14, 2009

Dear Gail,

I'm writing to you again in regards to our phone conversation. The fact is, I would never work for a company like yours even if I did have a degree. My views would "still" be in the opposition of this project. I know you were just trying to make me feel comfortable talking to you. By telling me, "We should've hired you" but really I am not a materialistic person. I'm just a person concerned for my culture and our environment.

Anyway, back to business. I told you that I talked to Alice Akau. She is an old resident of the area who said that they had tried several efforts to stop the first projects on Kawaihae Harbor but the Army Core of Engineers and the State of Hawai'i still continued on the developments on Kawaihae Harbor. It is evident to me that our old timers from Kawaihae "did" speak out. We are once again speaking out island wide. Enclosed, are more petitions for your final EIS.

Alice Akau's family home was where the fuel tanks are stored now. Across the street from the restaurant. She said that "one day, her grandfather and grandmother were asleep in their family home when a tidal wave hit. It carried the family home across the street where the restaurant is today." Now, imagine that same scenario happening today! It is a horrifying thought. The irreversible ecological damage that can come from all this is devastating. That is why I don't want you to store any fuel or oil on the Pelekane Lands. The fuel across the street from the restaurant now is of great concern to me. I will have to ask the restaurant owners if they know the hazards that the Harbors fuel storage places on their business. They already said they wanted petitions.

I'm not a person who is against all development but can't we try to develop our island in an environmentally safe way? I don't feel that people in O'ahu should have authority over what happens on our island. I have seen the pollution that development causes in O'ahu because I grew up at Kane'ohe Bay. I do not want the same pollution to occur on this island. Please, print this letter and all the petitions in your Final Draft EIS for Commercial Harbors Master Plan 2020 for Kawaihae.

Very Sincerely,
Momi Subiono
Momi Subiono

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
1	Jenny Palatin	36 Akaka St. Hilo HI	935-7414
2	Jason S. King	PO Box 22 Kawaihae HI 96750	331-7289
3	Greg Sizer	Box 91 Kawaihae HI 96726	939-1667
4	Ray Leonard	PO Box 15 Kawaihae HI 96725	229-5180
5	Wendy Young	Box 7517 Kawaihae HI 96743	885-7019
6	Imogene D. Owe	PO Box 10615 Hilo HI 96721	956-1901
7	Hester Kemmings	P.O. Box Kaimaha HI 96743	887-1461
8	Locke Lindsey	2303 Kaimaha	91743 887-1461
9	Pauline McAleny	PO Box 252 Kawaihae HI 96750	323-3080
10	Carl Oht	49-3880 Wai Koloa St. Hilo HI 96720	889-3204
11	Patricia	P.O. Box 1228 Hilo HI 96721	
12	Charmelle Kuc	P.O. Box 1236 Kawaihae HI 96743	

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
	Randy Botti	305 KAMAMAKUA AVE #117 HIL, HI 96720	935-4070
	LANEAL LEE LO	P.O. BOX 312 K.M. HI 96722	322-7770
	Abbot Galeher	P.O. Box 463 HOLELOA HI 96725	331-8092
	Kevin Luzzo	P.O. Box 1570 KEALAKOHA HI 96750	329-40
	MARK EVANS	P.O. BOX 4209 PALOOA HI 96774	965-912
	Bob Beebe	P.O. BOX 2046 KAKAONA HI 96740	
	Brandon Bruce	77-6503 Seaview Cir Kailua Kona HI 96740	
	Tommy Wynn	P.O. Box 5608 KONA, HI 90745	
	Afa Tutolo	P.O. Box 2161 PALOOA HI 96774	
	John Dawson	P.O. Box 2347 KAMUELA, HI 96743	
	Chad Dunbar	P.O. Box 2347 KAMUELA, HI 96743	
	Rise Ramos	15-07 Lilipuna Rd. Kamehameha HI 96744	240-212

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#	Name	Address	Phone #
	Koda Saday	P.O. BOX 243 KAMUELA HI 96743	885-6896
	Menny Virgilio	P.O. Box 1618 HOLELOA HI 96721	965-7246
	Ralsigh Leano	P.O. Box 525 K.K. HI 96745	326-2009
	MEL PAPALE	72-1029 Ahulani St Kailua Kona	325-6602
	Leo Santimer	75-312 Huenia St K.K.	326-1441
	Mauk Collins	2180 KALANANAOE AVE.	961-3842
	JOHN BAHR	2180 KALANANAOE HIL	961-3842
	JENNIFER THORNTON	P.O. Box 4520 HOLELOA HI	965-969-1966
	JIM ELLIOTT	74-5603 AUPA ST K.K. HI 96740	989-1457
	Margaret Santos	81174 Waiminani Pr Kona 96740	960-2967
	Geri Lee Hong	P.O. Box 4091 Hilo 96720	982-8813
	DONDALE MR HOSNER	P.O. Box 2127 KAWAIIHAE HI	862-1232
	JOSEPH PIERSON	P.O. Box 1125 KAMUELA HI	885-4321

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

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#	Name	Address	Phone #
	Dennis C. Lindsey	PO Box 1570 Kealahou, HI 96750	322-3672
	Beth Granger	PO Box 4857 Kaneohe, HI 96745	325-3025
	STEVE JESSEN	PO Box 527 KAPAHA, HI 96755	889-5834
	Mimi Shirogami	PO Box 18165 Kaneohe, HI 96743	555-527
	Maria Waddell	" " 1523 Kaneohe, HI 96743	967-727
	Melissa Soares	P.O. Box 384907 Waikoloa, HI 96738	
	Shelly A. Nakamura	PO BOX 384892 Waikoloa, HI 96738	
	Mamanu M. Mamiida	P.O. Box 1401 Hanalei, HI 96727	
	Kathy Katoaka	P.O. Box 384171 Waikoloa, HI 96738	
	R. Maria Reynolds	PO BOX 385094 Waikoloa, HI 96738	
	Michelle Peleholani	PO Box 2883 Kaneohe, HI 96743	
	Ethel Robertson	PO Box 244 Pāpāhāna, HI 96780	
	JOE VERECE	P.O. BOX 6468 Hilo, HI 96720	

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

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#	Name	Address	Phone #
	M. Whitehead	P.O. box 1121	808 885-8729
	Natalie Juan	P.O. BOX 885 Kaneohe, HI	808-885-0650
	Jasmine Juan	" " " "	" " " "
	Winnie Dixon	PO BOX 44634 Kaneohe, HI	383-8009
	Jon Ross	P.O. Box 43 Hawaii HI	889-6911
	Ashley Morris	PO Box 545 Kapaau, HI	889-0525
	Bruce Hansen	P.O. 1555 Kaneohe, 96743	H/P
	Maria Hansen	Box 384192 Waikoloa, HI 96738	883-09
	Uma Koo	Box 884 Kaneohe, HI	889-5834
	LILUA PAPA	68-3883 Lua Kula St #206 Waikoloa HI 96738	883-9661
	TED LINDSEY	Box 834 Kaneohe, HI 96743	885-5047

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

420 Waijumbo Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
eMail rmc@hawaii.com



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Ms. Momi Subiono
May 15, 2001
Page Two

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner at 587-2503.

May 15, 2001

Ms. Momi Subiono
89-709 Lani kona Road
Captain Cook, Hawaii 96704

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Ms. Subiono:

Thank you for your letter of March 19, 2001, addressed to R.M. Towill Corporation, with regard to the above-referenced Draft Environmental Impact Statement (DEIS).

Concerning your conversation with Alice Akau of Kawaihae, please refer to our response to your undated letter received by the Department of Transportation between March 9 and 19, 2001.

With regard to your concern about the liquid bulk terminal, it will not be located in the Pelekane lands but rather in the coral stockpile area. The terminal will be developed to comply with strict Federal and State environmental requirements for construction and containment.

Harbors Division will make every attempt to develop Kawaihae Harbor in an environmentally sensitive way and ensure that all applicable laws and regulations are followed.

Very truly yours,

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division



Momi Subiono
89-709 Lani Kona Rd.
Capt. Cook, HI 96704

State of Hawaii
Department of Transportation
869 Pelechowski Street
Honolulu, HI 96813-5097
Attention: Mr. Glen Soma

Dear Mr. Soma,

I'm writing to you about the public meeting you had at the Old Airport in Kona about the Master Plan for Kawaihae and Hilo Commercial Harbors 2020 in 1998. I am requesting that you schedule two more meetings on the matter. One in Kawaihae and one in Kohala. I feel the Community will be able to speak out to stop this project. They will speak out on the matter as we have informed many Community members on the so called Harbor Improvements. You will be receiving more petitions on the Communities opposition to the project. The people have stated to me that they knew nothing about the developments. All petitions must go in the Final EIS. You will receive alot. Call Alwaker called me to find out exactly what I am telling the public. I told her, "the truth". That you (The DOT) plan to store hazardous chemicals on our Coded Lands. You plan to pour cement over our beloved beach between the LST ramp and the fishery (which is covered with silt and dead because of the construction you have been doing in the area). You are perpetuating the killing of the reef with your break wall that you spent millions of taxpayers dollars on which will be a money pit because the wall is already eroding. Keeping the people from gathering recreation, stwarding the land, and beach access because you plan to bring heavier equipment into the area which poses a threat to human life. I feel strongly that you should have the public meeting at Kawaihae on a Saturday so the Community voice can best be heard. I would like a prompt response to this letter. By March 30, 2001.

Very Sincerely,
Momi Subiono
Momi Subiono

420 Waikele Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
eMail rm@towill.com



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Ms. Momi Subiono
May 15, 2001
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May 15, 2001

Ms. Momi Subiono
89-709 Lani Kona Road
Captain Cook, Hawaii 96704

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Ms. Subiono:

Thank you for your letter undated letter which was received by the Department of Transportation on March 19, 2001 in which you provided comments on the above-referenced Draft Environmental Impact Statement (DEIS).

With regard to your comment about "the public meeting held at the Old Airport in Kona about the Master Plan for Kawaihae and Hilo Commercial Harbors 2020 in 1998," the Department of Transportation provided opportunity for discussion and input on the development of the 2020 Master Plan through its year-long collaboration with User Groups. The 45-day comment period for the above-referenced DEIS has provided an additional forum for the public to react to the Hawaii Commercial Harbors 2020 Master Plan improvements. Further, copies of the DEIS were provided to local newspapers West Hawaii Today and Hawaii Tribune Herald. Articles appeared in West Hawaii Today on March 13 and April 12 concerning the Hawaii Commercial Harbors Master Plan, further informing the public of the Island of Hawaii about the development plans. We also noted that you wrote a letter to the editor of West Hawaii Today that was published by the newspaper on March 27, 2001.

All petitions received during the DEIS public comment period will be published in the Final Environmental Impact Statement.

With regard to your comments about the content of the plan, you are correct that a liquid bulk terminal is planned for ceded lands. Such lands are provided to the State of Hawaii for public uses such as essential harbor infrastructure. The Department of Transportation pays the Office of Hawaiian Affairs for the use of those lands. You are correct that the 2020 Master Plan envisions construction of an additional pier along the shoreline

between the LST ramp and the fisheries area. The LST area, however, is not slated for development by the U.S. Army during the 20-year planning period and will continue to be available to the public as it is today for recreational use subject to safety considerations and the military's use of the area for loading and offloading.

The "breakwall" (breakwater) most recently constructed in the Kawaihae Harbor area was for a small boat harbor which is under the jurisdiction of the Department of Land and Natural Resources. The area is therefore outside the scope of the 2020 Master Plan for the commercial harbor at Kawaihae and outside the jurisdiction of the Department of Transportation. With regard to access to the harbor by the public for "gathering, recreation, stewarding the land and beach access," Kawaihae Harbor is first and foremost a commercial harbor facility. Despite this primary emphasis, the Department of expects to continue its practice of allowing public access to undeveloped areas of the shoreline within the commercial harbor boundaries. Safety regulations in effect today are intended to protect human life and will continue in the future.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division



heard her say
"I really liked the Marine
life in the area."
A copy was also sent to
the Dep. of Trans

Momi Sublono
HC-1 # 16
CC, HI 96704
1 (808) 328-8939

Received by Department of
Land & Natural Resources
of Department of Trans

Eric Guinther
45-309 Akimela St.
Kane'ohe, Hawaii 96744
Dec. 4th, 2000

Aloha Mr. Guinther,

I'm writing to you in regards to the study you did on the Kawaihae Environmental Impact Statement for the Harbor so called improvements 2020.

I am writing to you to urge you to study the ocean of the area thoroughly before you publish your report on the fauna of the area. I read the EIS for the Harbor and it states that there are no endangered species in the area. I disagree with this immensely and I and other people of the Community of Hawai'i would like you to do another study on the ocean surrounding the area of Kawaihae. The subjects I'd like you to study are:

1.) Fish spawning in the Harbor and the effects of the extra pollution in the Harbor that this project will create on the fish in Kawaihae. Including sharks.

2.) I'd like you to especially study these types of shells not found on any other beach but the one that will be destroyed by the Harbor revisions.

- A. Turbididae
- B. Leptothyra Verruca
- C. Turbo Sandwicensis
- D. Strombidae
- E. Strombus Maculatus
- F. Cypraeidae
- G. Cypraea Annulus
- H. Cypraea Caputserpentis
- I. Cypraea Granulata
- J. Cypraea Helvola
- K. Cypraea Isabella
- L. Cypraea Moneta
- M. Cypraea Sulcidentata
- N. Anachis Micae
- O. Eoplicia Varians
- P. Mitrella Margarita
- Q. Helicinus Variegatus
- R. Melampus Castaneus
- S. Chlamys Irregularis
- T. Haunaea Juddi
- U. Kupe's shells

All these shells are used by shell gatherers for lei making and have been used by the Hawaiian People since the ancient days. We are alarmed that they have been overlooked on the EIS and we feel that the bigger boats coming in the area will have a negative impact on the survival and reproduction of these shells and we are demanding that you go beyond the books and actually get in the waters of Kawaihae and study these shells. These shells are a precious resource for us and we would like the right to continue gathering the shells that wash upon the shore. We are also spiritually tied to these shells and feel they are part of our culture.

The seaweed in the area and how the extra pollution will effect it's growth and reproduction.

Archaeological Sites in the water. Their is a shark helau on the opposite side of the harbor and extra silt and extra environmental changes that this project will have that can jeopardize our cultural archeology.

I am hesitant to send you my sample of shells because I want you to come back to this island and really study all of these creatures and archeology more thoroughly before these creatures become extinct forever. If you would like the samples I would like to meet you on the beach at Kawaihae and I will give them to you their. The reason I am not sending them is mainly because I don't want you to say you studied them but did not enter the water to do so. Please get back to me on this. It is very important.

Very Sincerely,
Momi Sublono
Momi Sublono
HC-1 #16
CC, HI 96704
1 (808) 328-8939
Teacher of Hawaiian
Studies and
Environmental
Conservation and
Cultural Preservation

420 Wai'anae Road
Suite 411
Honolulu, Hawaii 96817-6941
Telephone 808 842 1133
Fax 808 842 1937
eMail rmt@towillhawaii.com



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Ms. Momi Subiono
May 15, 2001
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to be along the outer margin of the harbor" where shipping does not occur. Further, the DEIS discloses that the area where the green sea turtle *Chelonia mydas* was observed contains a benthic community limited to species prevalent along pilings. Since this area is slated for the construction of mooring dolphins, development will have little impact to marine life because the current macrobenthos exist in that environment already.

With regard to the study of "shells not found on any beach but the one that will be destroyed by the Harbor revisions," the above-cited water quality and marine biologic survey characterized the kinds of benthic communities present as indicated by the more obvious creatures living there, emphasizing those areas designated to undergo the greatest physical alterations under the Hawaii Commercial Harbors 2020 Master Plan. AECOS, Inc., comments: "The report by Momi Subiono on various Hawaiian marine mollusks is very interesting, but not specific in its treatment to species found in Kawaihae Harbor."

With regard to your comment that "the shells have been overlooked in the EIS," we concur that the shells were not specifically mentioned in the preliminary disclosures contained in the Environmental Impact Statement Preparation Notice, to which your December 4, 2000 responded. You also state "we would like the right to continue gathering the shells that wash upon the shore." The shells are covered by DEIS under discussion of marine biology. For example:

- On page 3-32, the DEIS states: "Pier and terminal construction along the current shoreline of the coral stockpile will remove or cover small mollusk shells commonly found in this area. However, the U.S. Army LST/LSV ramp, in which these shells have been observed, will remain available to the public except when explosives are being loaded and offloaded, a use restriction that is currently in force and will continue for safety reasons." Please also note that on page 2-20 of the DEIS that development of proposed Piers 3 and 4 in the coral stockpile area is not slated until the year 2010 under the Hawaii Commercial Harbors 2020 Master Plan.
- On page 3-30, the DEIS states: Also observed in this area are small mollusk shells of the species which appear to be gathered by one individual. According to wildlife biologists at the U.S. Fish & Wildlife Service, these mollusks are common and were most likely dredged from former coral reefs as opposed to something that grows there now (Personal Communication, Kevin Foster, Wildlife Biologist, U.S. Fish and Wildlife Service (USFWS), 2000). According to the head malacologist (shell expert) at Bishop Museum, there are no threatened or endangered intertidal species in the Hawaiian Islands (Personal Communication, David Cowey, Ph.D., 2000). Therefore the mollusks found at Kawaihae Harbor are not considered threatened or endangered.

May 15, 2001

Ms. Momi Subiono
89-709 Lani Kona Road
Captain Cook, Hawaii 96704

Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement (DEIS)

Dear Ms. Subiono:

Thank you for your letter of December 4, 2000, which was addressed to Mr. Eric Guinther of AECOS, Inc. The firm AECOS, Inc. was retained to perform the Review of Water Quality and Biology in Kawaihae and Hilo Harbors for the Harbors 2020 Master Plan Implementation EIS. Their full report is published in the DEIS. Your letter provided comments on preliminary disclosure information contained in the Environmental Impact Statement Preparation Notice of October 2000. You resubmitted your December 4, 2000 letter to AECOS, Inc. to R.M. Towill Corporation for inclusion in the Final EIS.

With regard to your comments on endangered species, the DEIS discloses that the marine biologist surveying the area observed a threatened green sea turtle *Chelonia mydas* in Kawaihae Harbor. These turtles currently coexist with commercial shipping and pleasure boating activities in the harbor without incident. In addition, the DEIS contains specific information about how any threat to the safety of these turtles will be mitigated during construction activities. The DEIS states, "Because of the occasional presence of a threatened species within both harbors, Harbors Division will maintain close coordination with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service during project planning and construction. The threatened green sea turtle will be protected from dredging and pier construction activities through the use of at least one siltation curtain at each harbor location. The flexible fabric curtain will create a barrier from construction, preventing the turtles from entering an area of potential harm."

With regard to spawning of marine life within Kawaihae Harbor, AECOS, Inc. "has not heard before that the harbor is a nursery for fish or sharks. It is possible that because the harbor provides sheltered conditions along a coast with few large bays, juvenile hammerheads are attracted here. It is unlikely that the proposed changes at Kawaihae Harbor would alter conditions sufficiently to reduce use of the harbor's waters by either turtles or sharks. The harbor resources most attractive to these marine creatures are going

10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Ms. Momi Subiono
May 15, 2001
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- On page 3-34, the DEIS states: "Although small mollusk shells will be removed from project areas, the U.S. Army LST/LSV area will provide continued gathering opportunities in the commercial harbor area."

With regard to "archaeological sites in the water," the shark heiau is outside the scope of the commercial harbor at Kawaihae. Any drainage problems that may have resulted in silt deposits did not originate from Kawaihae Harbor as the harbor is "downstream" rather than "upstream" from this area.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division
Eric Guinther, AECOS, Inc.

DOCUMENT CAPTURED AS RECEIVED

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Name	Address	Phone #
<i>[Signature]</i>	PO Box 2465 Kawaihae HI 96741	857-7600
<i>[Signature]</i>	90-218 MAUNAHUA RD, MAUNAHUA, HI 96721	
<i>[Signature]</i>	74-5182 Kanae -1 Kailua-Kona HI 96740	
<i>[Signature]</i>	70-500 P.O. Kona HI 96721	
<i>[Signature]</i>	P.O. Box 2465 Kawaihae HI 96741	
<i>[Signature]</i>	P.O. Box 101 Kailua-Kona HI 96740	76-25
<i>[Signature]</i>	P.O. Box 2524 Kawaihae HI 96741	807-50
<i>[Signature]</i>	P.O. Box 744 Kailua HI 96740	
<i>[Signature]</i>	83-5731 MAUNAHUA HWY, CAPE COOK HI 96744	
<i>[Signature]</i>	73-1156 Loloe Dr K-K HI 96740	
<i>[Signature]</i>	73-1180 Loloe Dr K-K HI 96740	
<i>[Signature]</i>	PO BOX 2413 Kailua Kona HI 96741	967-2413
<i>[Signature]</i>	" " " " " "	" " " " " "

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline! or email: momishells@hotmail.com

WES	KIS	MM	BRT	MM	BRT
RF	MM	BRT	MM	BRT	MM
REC'D MAR 28 2001					
GK					

Momi Subiono
89-709 Lanikona Rd.
Captain Cook, HI
96704
March 22, 2001

R.M. Towill Corporation
Attention: Gail Atwater
420 Waiakamilo Rd.
Honolulu, HI
96817

Dear Gail,

I am once again writing to you in regards to our phone conversation on March 09, 2001.

Anyway, you stated that I was the only shell picker that has been writing. To tell you the truth, many of those signatures came from shell pickers and you will receive letters from some of them as well. They don't have to identify themselves as shell pickers. Most of the petitions that I am personally sending you came from walking up and down the very beach in question. Kawaihae Small Boat Harbor between the LST ramp and the dead fishery, and at Pua ka iima surf park.

Fishermen also have been asking for our petitions as this project can cause irreversible environmental damage to their livelihood. They are very eager to receive more information on this. I think next, I will send them all a copy of the map of the plans the Department Of Transportation has for Hilo Harbors. I'm sure they will be very interested in all this. I am sending you two more pages of petitions from the Nakoa O Pu'ukohola Heiau. They are the group that does the ceremonies at the heiau. They seemed very concerned about the situation. Please make sure this information gets in your Final EIS.

This is letter along with the letters dated March 09, 2001, March 19, 2001 I am submitting once again for your Final EIS. I also resubmitted the letter dated December 04, 2001 as it did not go in your Draft EIS. Maybe you lost it? Thank you again for your attention on this.

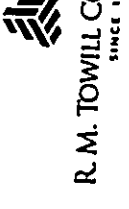
Sincerely,
Momi Subiono
Momi Subiono

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
	R.D. STEWART	P.O. Box 451 Pepeekeo, HI. 96783	969-8659
	H.K. MAKIWA	RR3 Box 3959 Pahoa, HI. 96778	326-3769
	Ernest + JoAnn Reyes	79-5182 Kuni Pl. Kailua Kona Hawaii 96740	# 3295031
	M.E.K. Makiui	Box 155 Kamaela	Same
	Luana + Kristina Lopes	Po Box 6927 Kamaela HI 96743	885-2053
	B. Kamila Chismar M.D.	P.O. Box 1723 Hanalei, HI. 96727	775-9003

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline! or email: momishells@hotmail.com

420 Waijambō Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
eMail info@rmtowill.com



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Engineering
Environmental Services
Photogrammetry
Surveying
Construction Management

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division

May 15, 2001

Ms. Momi Subiono
HC-1 #16
Captain Cook, Hawaii 96704

Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement

Dear Ms. Subiono:

Thank you for your letter dated March 22, 2001, addressed to R.M. Towill Corporation, with regard to the above-referenced Draft Environmental Impact Statement (DEIS).

With regard to shell pickers, to date no one else has provided written comments on any shells that may be found in the coral stockpile area of Kawaihae Harbor. The shells found on the coral stockpile are not under any federal protection as threatened or endangered species.

Concerning fishing, it has been the longstanding practice of Harbors Division to allow recreational fishing at Kawaihae Harbor and Hilo Harbor, subject to safety requirements in effect at the harbor today. This is explained in Section 4.6 of the DEIS.

We acknowledge receipt of the petitions attached to your letter of March 22, 2001. In accordance with public review procedures for environmental impact statements, we will publish them along with your letters of March 9 and March 19, 2001.



Momi Subiono
89-709 Lani Kona Rd.
Captain Cook, HI
96704
March 22, 2001

State of Hawai'i
Department of Transportation
Harbors Division
Attention: Glen Soma
869 Puuhonohoni St.
Honolulu, HI
96813-5097

Dear Glen, and Brian,

I am once again writing to you in regards to a phone conversation with Gail Atwater on March 09, 2001.

Anyway, she stated that I was the only shell picker that has been writing. To tell you the truth, many of those signatures came from shell pickers and you will receive letters from some of them as well. They don't have to identify themselves as shell pickers. Most of the petitions that I am personally sending you came from walking up and down the very beach in question. Kawaihae Small Boat Harbor between the LST ramp and the dead fishery, and at Pua ka ilima surf park.

Fishermen also have been asking for our petitions as this project can cause irreversible environmental damage to their livelihood. They are very eager to receive more information on this. I think next, I will send them all a copy of the plans the Department Of Transportation has for Hilo Harbors. I'm sure they will be very interested in all this. I am sending you two more pages of petitions from the Nāhona O Pū'uhōhōia Heiau. They are the group that does the ceremonies at the heiau. They seemed very concerned about the situation. Please make sure this information gets in your Final EIS.

This is letter along with the letters dated March 09, 2001, March 19, 2001 I am submitting once again for your Final EIS. I also resubmitted the letter dated December 04, 2001 as it did not go in your Draft EIS. Maybe you lost it? Thank you again for your attention on this.

Sincerely,



Momi Subiono

420 Waiakama Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1927
eMail rmcow@rmtowill.com



R. M. TOWILL CORPORATION
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Construction Management

Ms. Momi Subiono
May 15, 2001
Page Two

May 15, 2001

Ms. Momi Subiono
IIC-1 #16
Captain Cook, Hawaii 96704

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Ms. Subiono:

Thank you for your letter dated March 22, 2001, addressed the Department of Transportation, with regard to the above-referenced Draft Environmental Impact Statement (DEIS).

With regard to shell pickers, to this date no one else has provided written comments on any shells that may be found in the coral stockpile area of Kawaihae Harbor. The shells found on the coral stockpile are not under any federal protection as threatened or endangered species.

Concerning fishing, it has been the longstanding practice of Harbors Division to allow recreational fishing at Kawaihae Harbor and Hilo Harbor, subject to safety requirements in effect at the harbor today. This is explained in Section 4.6 of the DEIS.

We acknowledge receipt of the petitions attached to your letter of March 22, 2001. In accordance with public review procedures for environmental impact statements, we will publish them along with your letters of March 9 and March 19, 2001.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga, AICP
Project Manager


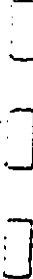





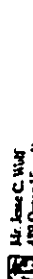

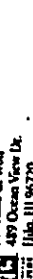









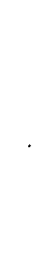









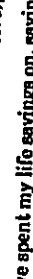



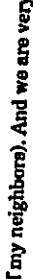


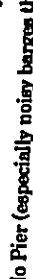
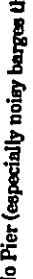
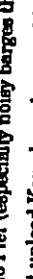
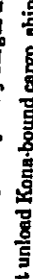
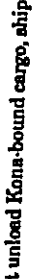





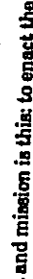
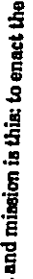





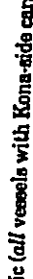















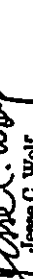






































































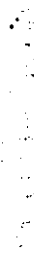

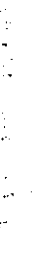



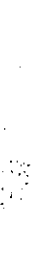







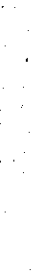
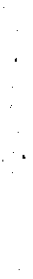
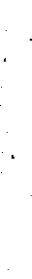


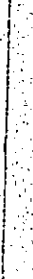

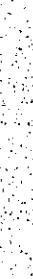
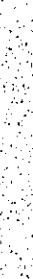

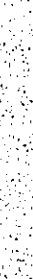
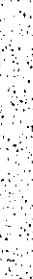
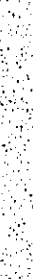
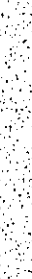




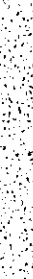






Cc: Department of Transportation, Harbors Division



March 23, 2001

Chester Koga

R.M. Towill Corp.

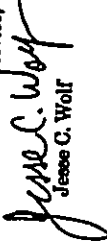




















































































































































































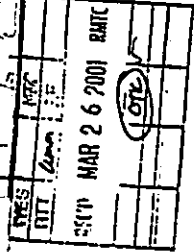
Dear Mr. Koga:

I own a house very near Hilo Pier (489 Oceanview Drive), a house bought with my veteran's pension, a house I've spent my life savings on, savings earned by serving this country well (as have many of my neighbors). And we are very disturbed by the thought of expanding the traffic at Hilo Pier (especially noisy barges that unload oil for Kona power plants, plus barges that unload Kona-bound cargo, shipments that *should be unloaded at Kawaihae Harbor*).

Therefore our main point and mission is this: to enact the *crucial* need for a shift of ships to Kawaihae Harbor, thereby easing any threat to the peace and safety of tranquil Hilo with unneeded Pier traffic (*all vessels with Kona-side cargo*). Hence we *sensibly develop Kawaihae Harbor to ease Hilo Pier's burden. This is the community's plan.*

Yours in truth and service,


Jesse C. Wolf



420 Waiakama Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
eMail res@hawaii.r.com



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Mr. Jesse Wolf
May 15, 2001
Page Two

May 15, 2001

Mr. Jesse C. Wolf
489 Ocean View Drive
Hilo, Hawaii 96720

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Mr. Wolf:

Thank you for your letter dated March 23, 2001 in which you offered comments on the above-reference Draft Environmental Impact Statement.

Your letter speaks of the need to "sensibly develop Kawaihae Harbor to ease Hilo Pier's burden." The Hawaii Commercial Harbors 2020 Master Plan concurrently considered development plans for both of the commercial harbors on the Island of Hawaii (Hilo Harbor and Kawaihae Harbor). The plan was formulated in this way because of the acknowledged interdependence of the two harbors in serving the island's shipping needs. The methodology for planning included quantitative analysis of future demand for cargo at each of the harbors. In this way, the Department of Transportation, Harbors Division can provide the appropriate facilities in each location.

With regard to the barges that offload fuel at Hilo Harbor for use in Kona, the 2020 Master Plan includes construction of a new liquid bulk terminal (storage) facility at Kawaihae Harbor which will receive bulk fuel shipments from ships in that harbor. This will replace the current system of offloading fuel from interisland barges in Hilo Harbor and trucking it across the island to liquid bulk storage facilities at Kawaihae Harbor.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga
Project Manager

Cc: Department of Transportation, Harbors Division





Kanoelehua Industrial Area Assn., Inc.
820 Piilani Street, Suite 201 • P.O. Box 4742
Hilo, Hawaii 96720
Phone (808) 961-5422 • Fax (808) 935-9740

March 27, 2001

R.M. Towill Corp.
C. Koga
420 Waiakamilo Road, Ste 411
Honolulu, HI 96817

Dear Sir,

This is in reference to the article in the Hawaii Tribune-Herald regarding the expansion of Hilo Harbor.

Requesting more information on the EIS draft to be forwarded to the KIAA office.

If you have any questions, please feel free to contact KIAA at 961-5422.

Thank you,

Marlene Salmo
KIAA

WEB	RTS		
REF	MM		
RT	Every	BRT	
REC'D MAR 28 2001			
c.T.E.			

420 Waiakama Road
Suite 411
Honolulu Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
eMail rmowill@hawaii.rr.com



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April 6, 2001

Ms. Marlene Salmo
Kanoielehua Industrial Area Association, Inc.
820 Piilani Street, Suite 201
Post Office Box 4742
Hilo, Hawaii 96720

RE: Hawaii Commercial Harbors 2020 Master Plan Draft Environmental Impact Statement

Dear Ms. Salmo:

Thank you for your letter of March 27, 2001 regarding the above-referenced Draft Environmental Impact Statement. As explained to you on the telephone, the Hilo Public Library has a copy of the document which is available to the public.

Very truly yours,

Gail W. Atwater, AICP
Senior Planner

cc: Glenn Soma, Department of Transportation, Harbors Division



Chester Koga
c/o R.M. Towill Corp., 420
Waikamilo Rd. Suite 411
Honolulu, HI 96817

March 26, 2001

NES		KTS	
R-F	PM	MM	BRT
WED	MAR 28	2001	MMT

RE: PORT OF HILO EXPANSION

I have read, with grave concerns, the four recent articles in the Tribune Herald by some officials, who most likely don't live in this area, wanting to build a larger port in Hilo. I have no doubt in my mind that such a project would irreversibly change the lifestyle of all the local Hilo people for the worse, especially for the residents of Keaukaha and Banyan Drive.

Do those officials, so willing to drastically change our lifestyle realize that each giant tour ship of today carries the equivalent number of people of two or three former models? Since the increased docking of these ships into the Hilo harbor for the past two years we are already experiencing bumper to bumper car traffic, increase noise pollution and air pollution. Even more alarming is the change in behavior of many drivers. The aloha spirit has disappeared; they have become much less courteous and patient.

Every time one or two ships are in port, one can count up to five large Robert's Hawaii tour buses line up in a procession going to or coming from the port of Hilo. In addition there are the other large tour bus companies: Jacks' Tours, Polynesian Adventure, Green Travel and Tour using the same streets back and forth. Six additional new names have appeared on tour buses within the short period of two years.

Kalaniana'ole from Kamehameha to the Hilo harbor has always been a busy street. Each morning till evening there are the necessary processions of 18 wheel trucks going from or to the port carrying their cargo. Adding more lanes to the existing ones will only be the beginning of the irreversible changes that the people in Hilo will have to face in their lifestyle. The laid back way of life will be replaced by the hectic and often rude attitude found in so many cities. These are cities with more traffic, more noise, and more people. Hilo has still a chance not to go there.

My family and I have already experienced the drastic changes to our way of life in a formerly small town in California. There, some merchants and county and state officials with incredible **SHORTSIGHTEDNESS** brought loads and loads of tourists, diesel buses and crowded shopping malls and streets. There was also new construction of resort motels, and the inevitable traffic congestion and air pollution and overcrowding. To group of "advisers" only focused on bringing more money to a few of the local tourist merchants. More money came, but most local people who had experienced a more peaceful time moved out repelled by the overwhelming drastic changes in their lifestyle. My husband and I moved to Hilo. We found a beautiful little town, full of green parks, and people who seem to want to preserve the natural beauty of this area and its slow way of life.

Please, before you embark in such dramatic changes as to enlarge the tourist port in this little town with a history of tsunamis, consult with all the people who will be directly affected. Do not allow yourself to be influenced by a quick money fix, or by people who live somewhere else. I am sending this letter to all officials that might influence the Port of Hilo expansion. Having experienced the "future" of Hilo in another place I am pleading with you- do not ruin this beautiful rural town.

Sincerely,

Elfriede R. Wilkins

Elfriede R. Wilkins
20 Akepa Street Hilo, HI 96720

420 Waiakamohi Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
eMail rmtowill@hawaii.rr.com



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Ms. Eilfriede Wilkins
May 15, 2001
Page Two

We cannot comment on applicability of the experience you had in California to the future of Hilo. However, the Hawaii Commercial Harbors 2020 Master Plan was developed as an islandwide plan because of the interdependence of the two commercial harbors at Hilo and Kawaihae. The plan ensures that the current harbor traffic that supports west Hawaii will be transferred to Kawaihae Harbor in the future.

May 15, 2001

Ms. Eilfriede Wilkins
20 Akepa Street
Hilo, Hawaii 96720

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Ms. Wilkins:

Thank you for your letter dated March 26, 2001, which provided comments on the above-referenced Draft Environmental Impact Statement, entitled "Port of Hilo Expansion."

The Hawaii Commercial Harbors 2020 Master Plan was a collaborative effort between the Department of Transportation, Harbors Division and business and community leaders who spent more than one year developing the Hawaii Commercial Harbors 2020 Master Plan. This DEIS is another means of obtaining broader public input on the plan.

Hilo Harbor is considered essential infrastructure. The State of Hawaii is responsible for ensuring that future demand for shipping will be accommodated. With regard to the capacity of tour ships, we recognize that ships today have greater capacity. However, the passengers are generally only on the island for one day and leave before evening. Their spending provides an important economic boost to the economy of the Hilo area. In addition, foreign cruise ships are not permitted to leave any garbage or sewage in Hilo.

With regard to your concern about tour busses entering and leaving the harbor, the Hawaii Commercial Harbors 2020 Master Plan provides additional access roads leading from existing roads into the harbor. One access road is planned to enter a new passenger terminal and another, which has already been constructed, will lead to the overseas container terminal. Breaking the traffic up between three access roads will allow vehicles such as busses and trucks to go straight to their destinations within the harbor. In addition, DOT-Harbors Division will work with DOT-Highways Division to make adjustments to the Hawaii Long Range Land Transportation Plan highway projects to ensure acceptable traffic flow in the harbor vicinity.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner at 587-2503.

Very truly yours,

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division



BEULAH J. CAUSTANO
GOVERNOR

MAJOR GENERAL EDWARD L. CONNER, JR.
DIRECTOR OF CIVIL DEFENSE

EDWARD T. TEIXEIRA
VICE DIRECTOR OF CIVIL DEFENSE



STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
3845 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96818-4965



PHONE (808) 733-4300
FAX (808) 733-4371

YES	NO
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25/4	26/4
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REC'D APR 11 2001
MTC

April 9, 2001

TO: Mr. Glenn Soma
Harbors Division
Department of Transportation
79 So. Nimitz Highway
Honolulu, Hawaii 96813

FROM: Edward T. Teixeira
Vice Director of Civil Defense

SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE HAWAII
COMMERCIAL HARBORS 2020 MASTER PLAN

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for the Hawaii Commercial Harbors 2020 Master Plan, State of Hawaii, Island of Hawaii, Hilo Harbor. TMK 2-1-07; 2-1-09 and Kawaihae Harbor. TMK 6-1-03.

At the present time, both Hilo and Kawaihae Harbors have adequate outdoor warning siren coverage. However, when the Kawaihae Harbor does expand to the Pelekane section of the harbor, a new siren must be installed. Recommend that a siren using solar power with a minimum rating of 121 dbc omnidirectional be installed.

Technicians and planners are available to assist and answer any questions you may have. If there are any further questions, please have your staff call Mr. Norman Ogasawara of my staff at 733-4300, ext 531.

c: Mr. Chester T. Koga
R. M. Towill Corporation
420 Waiakamilo Road, Suite 411
Honolulu, Hawaii 96817
Governor, State of Hawaii
c/o Office of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, Hawaii 96813

Hawaii Civil Defense Agency

420 Waiakama Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
eMail rtm1@towill.com



Planning
Engineering
Environmental Services
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Surveying
Construction Management

May 15, 2001

Mr. Edward T. Teixeira
Vice Director of Civil Defense
3949 Diamond Head Road
Honolulu, Hawaii 96816-4495

Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement

Dear Mr. Teixeira:

This is in response to your memorandum to Mr. Glenn Soma of the Department of Transportation, Harbors Division, dated April 9, 2001, which provided comments on the above-referenced Draft Environmental Impact Statement.

The Department of Transportation Harbors Division will ensure that an additional siren will be provided when harbor development expands into the coral stockpile area which you refer to in your letter as the "Pelikane section" of the harbor. Please be advised that the so-called Pelikane lands are planned to be retained as a buffer zone between harbor development and the Puukohala Heiau National Historic Site under a cooperative agreement between Harbors Division and the National Park Service. This is illustrated in Figure 22 on page 4-13 of the DEIS.

Thank you for your comments.

Very truly yours,

Chester T. Koga

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division



Harry Kim
Mayor



County of Hawaii

DEPARTMENT OF PUBLIC WORKS
25 Airport Street, Room 201 - Hilo, Hawaii 96720-0251
(808) 941-8311 - Fax (808) 941-8428

W.L.					
R.A.					
HTT					
MM					
BRT					
REC'D APR 13 2001					
CMK					


Dennis K. W. Lee
Director

Jiro A. Sumada
Deputy Director

DRAFT EIS
April 10, 2001
Page 2 of 2

The projected increase in traffic along Kalaniana'ole Street will affect the intersections of Keaa Street and Silva Street. Signalizations may be warranted at these intersections. Signalization of Keaa Street may mitigate the problems of Silva Street by redirecting traffic away from the Silva Street intersection.

Should there be any questions concerning this matter, please feel free to contact Mr. Casey Yanagihara in our Engineering Division at (808)961-8327.


Galen M. Kuba, Division Chief
Engineering Division

CKY

copy: OEQC (G. Salmonson)
R. M. Towill Corporation (C. Koga)

Mr. Glenn Soma
Department of Transportation
Harbors Division
79 S. Nimitz Highway
Honolulu, Hawaii 96813

**SUBJECT: DRAFT ENVIRONMENTAL IMPACT STATEMENT
HAWAII COMMERCIAL HARBORS 2020 MASTER PLAN**
TMK: 2-1-07 & 2-1-09; Hilo Harbor
6-1-03; Kawaihae Harbor

We acknowledge receipt of your letter concerning the subject matter, and provide you with our comments as follows:

1. We cannot make an adequate review of this EIS without a narrative or plan layout of the actual harbors 2020 Master Plan. It was particularly difficult to determine what is the future build-out on the easterly side of Hilo Harbor.
2. If the Harbors transport their shipping and construction wastes to the West Hawaii Landfill, and attempt to dedicate an area for recycling product storage for eventual shipment off the island, we have no concerns for solid waste disposal. We will not allow any harbor dredged material at the Hilo Landfill.
3. We do not agree that a single access to Hilo Harbor from Kalaniana'ole Street would be adequate until year 2020 (ref. Sec. 3.5.2). Presently Silva Street is at or approaching LOS "F". The cross traffic intermixing with the truck traffic (e.g., HT&T trucking yard) is causing a problem. The proposal for additional access roads needs to be considered now.

420 Waiakama Road
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Honolulu, Hawaii 96817-0941
Telephone 808 842 1133
Fax 808 842 1937
eMail rmtow@hawaii.com



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Construction Management

Mr. Galen Kuba
May 15, 2001
Page Two

May 15, 2001

Mr. Galen M. Kuba
Division Chief
Engineering Division
County of Hawaii
Department of Public Works
25 Aupuni Street, Room 202
Hilo, Hawaii 96720-4252

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Mr. Kuba:

Thank you for your letter of April 10, 2001 in which you provided comments to the Department of Transportation on the above-referenced Draft Environmental Impact Statement (DEIS).

Concerning your comment #1 regarding a narrative or plan layout of the actual harbors 2020 Master Plan, the 2020 Master Plan is a conceptual land use plan. With regard to your comment that it was "particularly difficult to determine what is the future build-out on the easterly side of Hilo Harbor," Figure 8, page 2-18 in the DEIS shows that the eastern boundary of Hilo Harbor consists of the harbor breakwater and the eastern shore of Radio Bay. West of the indicated Hilo Harbor property boundary is a University of Hawaii facility.

Concerning your comment #2 regarding solid waste, the Department of Transportation, Harbors Division will transport their shipping and construction wastes to the West Hawaii Landfill, and dedicate an area for recycling product storage for eventual shipment off the island, as stated in the DEIS in Section 3.11.2 on pages 3-42 and 3-43. In addition, the Harbors Division intends to dispose of dredged material from Hilo Harbor at the Environmental Protection Agency (EPA)-approved ocean dumping site, as stated in Section 2.5.6 on page 2-6 of the DEIS.

Concerning your comment #3 regarding traffic, please note that Section 3.5.1 and Table 5 of the DEIS recognize that poor conditions (LOS F) already occur on Silva Street during peak hours. Mitigation of the existing problem, including widening of Kalaniana'ole Street, realignment of the intersection with Kubio Street/Silva Street, and signalization are potential mitigation measures; if the existing problem is mitigated, the single access is expected to be adequate for the volume of traffic expected in 2020. However, the provision of additional access roads to Hilo Harbor is recommended under the Hawaii Commercial Harbors 2020 Master Plan. You quoted page 3-12 of the DEIS as saying, "The traffic analyses indicate that a single access to Hilo Harbor from Kalaniana'ole Street would be adequate." This discussion continues as follows: "However, the harbor master plan indicates that additional access roads will be constructed to separate the access to differing functions within the harbor area. Intersection levels of service would be improved if additional access roads are provided." Please also see Figure 8, Hilo Harbor 2020 Master Plan Improvements, page 2-18, which shows the location of multiple access roads proposed to enter and exit Hilo Harbor. In addition, DOT-Harbors Division will work with DOT-Highways Division to make adjustments to the Hawaii Long Range Land Transportation Plan to ensure acceptable levels of service in the harbor vicinity.

With regard to cross traffic from H&T, use of a public street as part of a driveway or for maneuvering in and out of private property always has the potential to affect traffic. This will be considered in future planning by the Department of Transportation.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division

Original Message
From: Momi Subiono [mailto:momsub@mtowill.com]
Sent: Saturday, April 14, 2001 11:24 AM
To: chesterk@mtowill.com
Subject: Momi Subiono

Aloha Chester,

I am requesting a copy of the Final Environmental Impact Statement for Hawaii Commercial Harbors Master Plan 2020. I would appreciate a copy as soon as it comes out. I am also wondering why no one had contacted me on the petitions I sent in so far. Have you received any from me. I want all my testimony and my supporters testimonies answered in writing and all petitions published in the Final EIS.

Aloha Momi Subiono
89-709 Lani Iona Rd.
Captain Cook, Hawaii 96704

4/16/2001

From: Chester Koga
Sent: Monday, April 16, 2001 1:32 PM
To: 'momi subiono'
Subject: Hawaii Harbors Final EIS

Ms. Subiono:

We are currently in the process of preparing the Final EIS. We expect that the final EIS will be available in July based on our current schedule. The petitions you reference have been received by the Department of Transportation and a copy provided to us. As these document have been received in response to the Draft EIS, we will include them in the Final EIS.

Chester Koga, AICP
Project Manager
Reply to: [mailto:chesterk@mtowill.com]

Visit our web site at www.mtowill.com
420 Weialamilo Road, Suite 411
Hirohola, Hawaii 96817 tel: 808.842.1133 fax: 808.842.1937

Momi Subiono
89-709 Lani I kona Rd.
Captain Cook, Hawaii
96704

R.M. Towill Corporation
420 Waiakamilo Road, Suite 411
Hoeolu, Hawaii 96817
Attention: Gail Atwater, Chester Koga
April 16, 2001

April 16, 2001

Dear Mr. Minaai and Mr. Soma,

I am writing to you in regards to Marilyn Kall of Mr. Minaai's office. From an email from Chester Koga, he stated that all petitions of opposition will be published in the Final EIS. Therefore, that tells me that you "have" received the petitions and signatures of others in opposition. Why then, does Mrs. Kall say that I am the only one in opposition? I know that is not true. We are resubmitting this packet of petitions. I have 28 pages altogether 332 signatures about 7 new pages of petitions paper clipped in the back. Please make sure all the petitions are in as testimony along with my essay, and all letters. We are getting copies of petitions that others signed and circulated. I am glad I am not the only one in opposition to the Master Plan 2020. I am also wondering why you have not gotten back to me on any of my letters. I thought you were supposed to answer "every" one of them.

I'd also like to point out that the area the EIS has stated as the designated grounds for Liquid bulk terminal, the Peléane Lands is an irresponsible plan. It's that simple. Move it away from the ocean and away from the presline waters of Kawaihae. We are requesting the the Hawaii County dump the General Plans for this island and start over again. The Community is going to ask that we plan again this time asking for the input of the Community.

Mr. Soma has stated to me that citizens were at the meeting. I heard the people listed as citizens were business people who couldn't possibly give good ideas of what the Hawaii Community actually wants because they are lead by one thing, "money". OHA is an entity of the state of Hawaii therefore, their hands are tied and they have to shut up and let it all happen. They have not helped on this issue either. So much for the betterment of all Hawaiians.

It does not matter to me that the beach between the LST ramp is a man-made beach. It is a fact that the area was traditionally a gathering area for fish. The Army Core of Engineers, destroyed the shell beach and this is what is left of it. We have reclaimed it by continuing to use it as a gathering area. We plan to preserve this whole area, Peléane, Pua ka ilima, and the beach between the LST ramp and the fishery on the south end of the harbor.

Bush has just allocated 225,000 of Federal Funds for studies on "why the Kawaihae harbor was deemed "unusable" due to the massive winter waves that hit the breakwall posing a threat to the Cruise and Import ships behind this Hawaii Commercial Harbors Master Plan 2020 for Kawaihae Harbor. Why waste the money, give it to the teachers. You can do study after study but the bottom line is, you can't fight mother nature.

An elder of the area told me that a Hawaiian Fishpond was destroyed in order to do the first

development (Army Core of Engineers). This person said that the whole grounds of Kawaihae was "abundant" with life. The turtles would lay their eggs on the beach. From my understanding, by instinct, female turtles go back to the same beach they were hatched on to deposit eggs of their own. That beach is gone now. The Army Core of Engineers contributed to the fact that the turtle is an "endangered species". Now with out any regard for the Cultural significance past, present, and future the state of Hawaii Department of Transportation is continuing this effort to possibly cause the extinction of the Hawaii Species of Eupilia Varians, Microlla Margarita, Anachis Miser, Cypraea, architectonidae, Turbo Sandwicenensis, and many other shells. Here I have a list of the ones not in my essay. These are only a handful of the ones I find at the beach between the LST ramp and the fishery.

1. Neritidae family
2. Memnidae family
3. Marginellidae family
4. Trochidae family
5. Tectibranchia family
6. Bursidae family
7. Cassidae family
8. Epitonidae family
9. Trochidae family
10. Umbonitum family
11. Many varieties of rare cowries.

I would like a full report on the specific shells of these families included in your final EIS. The only way to do that is to get your oceanographer to actually get in the water and tell us if they are what the affects of pollution will have on these species.

I met numerous people who said they spent time on the Kawaihae shore in the past and people continue to use the shoreline to this day.

Very Sincerely,
Momi Subiono

Kawaihae Harbor expansion plans finds opposition

By BOBBY COMMAND/ West Hawaii Today

A South Kona woman said she has quit her job as a Hawaiian studies teacher to devote her efforts to stopping a planned expansion at Kawaihae Harbor.

Momi Subiono, 33, said she is spearheading a petition drive demanding bulk petroleum storage areas not be built as proposed in the Hawaii Commercial Harbors 2020 Master Plan.

The state Department of Transportation plans to spend \$150 to \$300 million for upgrades to Kawaihae and Hilo Harbors, which would take care of the Big Island's deep - draft harbor needs for the next 20 years.

State and petroleum company officials say a fuel farm at Kawaihae would make the distribution of fuel in West Hawaii more efficient as it would eliminate the need to truck it from Hilo, where it now is unloaded from fuel barges.

But the former Honanau School teacher said that's not worth the risk of a potential spill or other disaster at Kawaihae. "This is a tidal wave zone," she said. "There would be massive environmental damage if a tidal wave hit."

Subiono said she is also defending the rights of those who use the man - made coral beach at the south end of the harbor.

"This is our beach," Subiono said. "We're going to fight for it."

The proposed expansion of the deep - draft harbor that serves West Hawaii would include a bulk petroleum cargo terminal, dry bulk terminals, cargo container terminal, passenger terminal and ocean research facility, military cargo terminal and access roadways.

The man - made beach would be wiped out by a proposed pier, and the large coral flats in back of the beach would become the interisland cargo terminal. The area makai of Makahuna Gulch would be converted to a petroleum storage terminal.

State officials say canoe paddlers, fishermen and swimmers should be able to keep using the harbor unless their safety is jeopardized. Pleasure craft, however, eventually will be banned from mooring in the commercial section of the harbor.

But Subiono said the crushed coral beach should not be taken away.

<http://www.westhawaii.com/daily/2001/Apr-12-Thu-2001/news/news2.html>

4/13/2001

"A lot of the coastline is being closed off," said Subiono. "All communities need access to the shoreline, but where I live you need a key to get to the shoreline."

Subiono said those who live around the harbor and use it are not aware of what is taking place, and so she has asked for another round of public hearings. "The public is so uninformed," she said.

But Marilyn Kahi, public information officer with the state Department of Transportation, said administrator Brian Minaal sees no need for further informational meetings because Subiono appears to be the only one who has objected to the plans.

Kahi also said input was solicited at least six times in West Hawaii prior to the assembly of the master plan, and still is being accepted for the environmental impact statement.

Subiono said petitions, which have about 100 signatures on them, show she is not the only person worried about the expansion. She plans to give the names to the DOT.

"That's just what I got," she said. "Other people have petitions and I've told them to turn them into the state."

Kahi said improvements at Kawaihae will serve the majority of West Hawaii residents.

"It makes more sense to have a fuel farm on the west side of the island," Kahi said. "There is a 50 - 50 split for usage of fuel, and also of concern is the larger planes that want to come into the airport."

The state estimates 98 percent of all consumer items and raw materials that come to Hawaii flow through deep - draft harbors, making all the islands dependent on the facilities.

According to the master plan, the 73 - acre expansion of Kawaihae Harbor and the accompanying 42 - acre improvement at Hilo Harbor are vital to sustaining economic growth in Hawaii County, which has risen steadily since 1995.

The plan also points out a dramatic increase in cruise ship traffic and the lack of facilities to handle passengers. The state Department of Business, Economic Development and Tourism has projected as many as 500,000 cruise ship visitors by the year 2020.

Passenger facilities at Kawaihae would offer an alternative to cruise ships, which now anchor off Kailua - Kona and use shuttle boats to bring passengers to shore.

Dick Akana, vice president of Akana Petroleum, said having bulk petroleum shipped directly into Kawaihae would cut costs to consumers because the

<http://www.westhawaii.com/daily/2001/Apr-12-Thu-2001/news/news2.html>

4/13/2001

gasoline would no longer have to be trucked to West Hawaii from Hilo.

Akana also said it would take many fuel trucks off the road, making accidents less likely and lowering the probability that fuel would have to be brought by some other method to West Hawaii should Hawaii Belt Road in Hamakua be blocked.

While Akana said he understands Subiono's fears of an accident at the harbor, he added any new fuel farm at Kawaihae would have to be built to Environmental Protection Agency standards.

Kali said the alternative is not to expand, "but that won't be satisfactory as growth continues and the number of planes increase."

While Subiono said she is not against progress, "I am against development that is irresponsible, and I don't want to trade economic progress for ecological and cultural responsibility."

Subiono, who was raised in Kaneohe but is a member of the Kauaia family of Kohala, said she saw how the Windward Oahu bay was degraded by runoff from development during the 1960s and 1970s.

"It was not pretty," Subiono said. "Maybe that's why I'm doing this."

bcommand@westhawaii.com

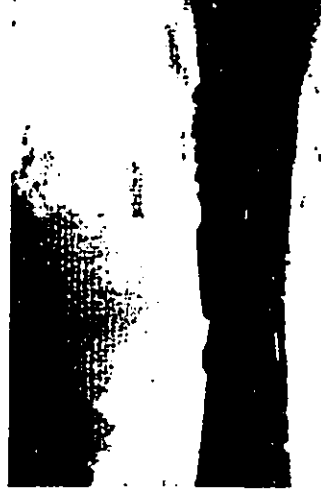
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4/13/2001

Kawaihae Archeological sites at risk of being harmed by a fuel or oil spill, caused by tidal wave, earthquake or fire which this area is known for. We oppose this in the Hawaii Master Plan Commercial Harbors 2020. This picture shows Pu'ukohola Heiau, Ma'ilikani Heiau and in these waters in Pelekane the submerged and silted over (due to Army Core of Engineers first development). We oppose this changes to this Harbor because your plans can cause irreversible environmental damage to this area.



(below) Another view of Pelekane beach. The breakwall has hindered shark migration through the area. Hele O Kupuni is a shark heiau that mo'olelo (true stories) are still occurring which would show the continuity of the historical significance of the area. The breakwall is also contributing to the stagnancy of the waters within Pelekane bay.

We "oppose" further desecration of this area as well as the areas shown in other pictures that we are sending.



Pictures by Miami Subiono
Testimony for opposition of Kawaihae Commercial Harbors Master Plan 2020
To be printed in Final Environmental Statement in opposition to the project.



Kawaihae Break wall (below) and Beach between LST ramp and fishery(at the bottom of page.)



This is the break wall (above). I speak of that is contributing to the stagnant waters in Pelekane Bay and has hindered the migration of sharks in the area. The break wall is also eroding on the corner which cannot be seen on the above picture. I will try to get a better picture.



This is the beach in Kawaihae, between the LST ramp and the fishery. This is our beach for shell collecting where young children learn to swim. Your plans call for pouring cement on this whole beach and turning this area into a dock. This is the beach I would like to see preserved for the Community to use eternally. The petitions are also opposing the development in this area of Kawaihae beach in the Hawaii Commercial Harbors Master Plan 2020.

Pictures by Momi Subiono 3/12/2001
Testimony for opposition of Kawaihae Harbors 2020 Master Plan
To be printed in final Environmental Impact Statement in opposition to the project.

We would like to know why old cars are stored in this area. Is this a designated dump? This is where you plan to store petroleum and oil in the future. Behind the cars is Pelekane Beach area. This is the area of questions. It is too close to the sea, and poses a threat to the ecosystem.



At one time this noted by the Draft EIS, as the fishery (below) was at one time, open to the view of ocean. The first development was done by the Army Core of Engineers and blocked off the mullets spawning grounds.



Pictures by Momi Subiono 3/12/2001
Testimony for opposition of Kawaihae Hawaii Commercial Harbors 2020 Master Plan.
To be printed in Final Environmental Impact Statement.

Pictures By: Momi Subiono
3/12/2001

Shark nursery area



The area above shows an area where the sharks come in to give birth to their young. This beach will be poured over with cement if the State of Hawaii goes through with the Harbors Master Plan 2020 for Kawaihāe. This is the area where the Army Core of Engineers brings their big ships in. It is polluted due to accounts of sludge being emitted into the water from the Armys ships.

(Below) A view from another angle of Kawaihāe Beach. The quality of life will be affected by this project because the public will have no place to go to relax and spend time for families as this beach will be off limits to the public.



We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
1)	Momi Subiono	87-701 Lani Kona Rd. CC HI 96704	328-8939
2)	Mimi Subiono	89-709 Lanikona Rd. CC HI 96704	328-8939
3)	Mimi Subiono	84-709 Lani Kona Rd CC HI 96704	328-8939
4)	MARJORIE J. PROSD	P.O. Box 1595 KAWAII HI	885-7165
5)	Mimi Subiono	P.O. Box 4062 Menlo Park CA 94026	(650) 212-1456
6)	Mimi Subiono	1337 Guadalupe Menlo Park CA 94025	(650) 212-1456
7)	Nicole Haruy	POB #4894 KAWAII HI 96705	885-7019
8)	Joyce Hauskate	POB #387 Kailua-Kona 96745	329-003
9)	Zac Vanderschiff	" " " "	" " " "
10)	EMIL MURRY	PO BOX 1082 KAMUEHA HI 96743	885-6174
11)	EDWARDS MURRY	PO BOX 1082 KAMUEHA HI 96743	885-6174
12)	MARGAL JAMES	86-704 Lani Kona Rd. HI 96704	328-7142
13)	Patrice Frawces	2134 AHA HUA CT # F 96706	621-2392

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
1)	Mimi Subiono	P.O. Box 387697 Waikeolu HI	887-9497
2)	Mimi Subiono	P.O. Box 4062 Menlo Park CA	650/813-456
3)	Mimi Subiono	68-3613 Pukou Pl. Waikeolu	808-883-1919
4)	Rene K. Ross	68-3613 Pukou Pl. Waikeolu	808-883-1919
5)	Kate Bertelmann	P.O. Box 437195 KAWAII HI 96743	887-1075
6)	Mimi Subiono		
7)	Mimi Subiono	P.O. Box 908 KAWAII HI 96755	889-5148
8)	Mimi Subiono	PO BOX 4354 KAWAII HI	885-4050
9)	Andrea K. Lash	P.O. Box 1022 Keolu HI 96758	
10)	Danahy Clarke	P.O. Box 826 Honouliuli HI 96726	939-8680
11)	Mimi Subiono	P.O. Box 826 Honouliuli HI 96726	328-9106
12)	Mimi Subiono	PO Box 671 Honouliuli HI 96726	328-2224
13)	Kurtis Yamandi	Box 401 Honouliuli HI 96726	328-8099

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

DOCUMENT CAPTURED AS RECEIVED

We, the people of Hawaii's County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawaii's, Master Plan 2020. We do not agree that liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawaii's Master Plan 2020 be killed.

#	Name	Address	Phone #
1)	Carol DeFazio	P.O. Box 321 HONANAU HI 96726	328-9071
2)	Carol Carroll	PO BOX 929 HONANAU HI 96726	328-2217
3)	Terry Wallace	PO BOX HONANAU HI 96726	
4)	Mark Luis Collette	HONANAU HI 96726	328-2700
5)	Jan Hacia	P.O. Box 424 Kealahou, HI 96750	323-9529
6)	GARREN WALKER	PO 690 HONANAU 96726	328-9937
7)	SUZANNE MAREK	PO 790 HONANAU HI 96726	929 9650
8)			
9)			
10)			
11)			
12)			

Please send all petitions to the State of Hawaii's, Department of Transportation 869 Punchbowl St. Honolulu, Hawaii 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

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#	Name	Address	Phone #
1)	John Josephin	PO BOX 6075 HAWAII	938 0368
2)	Carol Lindenbaum	P.O. Box 83 HONANAU HI 96726	328 8753
3)	Mary Prevetz	P.O. Box 492 HONANAU, HI	328 2526
4)	Craig Iwanaga	79-1114 Mammalahou Hwy Honolulu, HI 96725	324-0101
5)	Carmi Iwanaga	" " " "	" "
6)	Doborah Wiley	POB 1698 Kealahou, HI 96750	323-3138
7)	DIANA WOLKING	Rx 906 HONANAU HI 96726	371-3614
8)	Celeste Denis	P.O. Box 7150 Ocean View HI 96737	939-2877
9)	Edward Denis	P.O. BOX 218 HONANAU HI 96726	
10)	Mona Medler	P.O. Box 2114 Kealahou, HI 96750	322-2008
11)	Andrea K. Ah Chin	PO Box 992 Kealahou HI 96750	3287446
12)	Mark D. Garble	P.O. Box 269 Kealahou HI 96750	

Please send all petitions to the State of Hawaii's, Department of Transportation 869 Punchbowl St. Honolulu, Hawaii 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

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#	Name	Address	Phone #
1)	San Kaco	Ocean View	
2)	Viluhmi Domingo	99-2154 5th St. Romi Kō'ū HI 96757	739-8052
3)	Gay Carline	Box 722 Honouliuli	328-0709
4)	WILL THOMAS	OCEANVIEW HI	331-7160
5)	Yvonne Thomas	W. 21 KCC. HI. 96704	328-2641
6)	Janice Y. Kaka	87-3207 Rd. 2 Capt. Cook	328-8885
7)	Renee U. L. Mutchler	P.O. Box 6771 Ocean View HI	939-8668
8)	BYRON LEWORA Wright	94.5086 Pāhāhāhā Rd	328-7637
9)	Clude B. Kumaqim	87-3415 Datura Kd CC HI	328-2434
10)	Jenny F. Canda	PO Box 66 Honouliuli HI	328-8359
11)	Stacy K. Domingo	Box 904 Kealahou HI. 96750	
12)	Mike Dooley	88-1640 Uluā Drive	328-8868
13)	Lea Melrose	Box 166 Honouliuli	328-8915

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's, Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
1)	Julie A. Bushman-Smith	P.O. Box 5032 Hilo, HI 96720	808-929-8627
2)	Mac	"	"
3)	Jessie Parnes	PO Box 150 Honouliuli, HI 96706	
4)	Patty Parnes	"	"
5)	CAROL FARKAS	PO Box 6776 Ocean View HI	939-8140
6)	RAFAEL RAMIREZ	Box 1446, Kealahou HI 96750	328-2416
7)	Isaiah Deane	P.O. Box 937 Kealahou HI 96750	328-8080
8)	Albert LaRosa	82-5791 Napoosoo Rd. Capt. Cook, HI. 96704	328-1702
9)	Tom Wiley	PO Box 1698 Kealahou HI 96750	328-3038
10)	GRETCHEN KELLY	P.O. Box 146 CAPTAIN COOK, HI 96704	322-1788
11)	JANNY ROUNDS	835401 Painted Uluā Capt. Cook HI 96704	328-8054
12)	KAUILA HO	835401 PAINTED Uluā Rd CAPT COOK 96704	

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#	Name	Address	Phone #
1)	Linda M. Knapp	84-5119 Keolu O'Keawe Rd. Captain Cook HI 96704	328-9292
2)	Asta Jensen	83-5465 Mamelaha Hwy Capt. Cook HI 96704	328-2112
3)	Kelley Pappas	84-5062 City of Refuge Rd Hanalei HI 96726	328-9071
4)	Kii Morse	PO Box 370 Volcano HI 96785	967-7216
5)	Colette Hirata	44-254 Keolu Rd, Honokaa, HI	775-7167
6)	Randy Arroyo	PO Box 588 Capt Cook HI 96704	328-7424
7)	Nancy Miller	POB 1087 Kailua, Kona HI 96745	331-1943
8)	MARK Miller	POB 1087 K-k HI 96745	331-1943
9)	Loke Hochuli	POB 759 Hualoa HI 96725	960-2364
10)	Debra Rogers	PO 1013 Paoli Pool HI 96704	328-8127
11)	Wendy Peterson	POB 714 Hanalei HI 96726	328-2566
12)	[Signature]	[Signature]	1
13)	Raymond Mozena	100 Purko Bch Dr HI 96743	882-7670

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#	Name	Address	Phone #
	maru harada	ronukh@aloha.net P.O. Box 1998 Kona, HI 96743	885-7370
	Russell J Haas	PO Box 616 Mt. View HI 96771	963-6784
	Bonnie L Haas	PO Box 616 Mt. View HI 96771	" "

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#	Name	Address	Phone #
1)	Tom Bunge	734111 Olakua St Kailua Kona, HI 96740	385-6519
2)	Phil Appington	77-6502 KILOHANA ST. KAILUA-KONA 96740	329-0716
3)		75-5771 MAIKULUNA DR. KAILUA-KONA 96740	324-1532
4)	Gay Jensen	78-6800 Alii Dr. (9-305) Kailua-Kona, 96740	324-6207
5)	Linda J. Russell	LINDA J.P. RUSSELL #5 Haku Nui Rd, Captain Cook, HI 96750	323-9791
6)	SUE MAILANDER	77-6311 Alii Dr #201 KK 96740	329-8629
7)	KAREN SPACHNER	Box 5497 KK 96745	322-0015
8)	MARK KIMBALL	Box 561 HOLEALOA 96725	328-989-0980
9)	CHARLES GALLISON	Box 1143 CAPT. COOK 96704	328-8180
10)	BRIAN CRAIG	77-6541 PRINCESS KEELIKOLANI KK 96740	322-2056
11)	NICOLINA RINALDI	77-6489 PRINCESS KEELIKOLANI KK 96740	322-3385
12)	ELLEN CRACKER	P.O. Box 965 KEALAKEKUA 96750	328-8131

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

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#	Name	Address	Phone #
1)	Ryan Nelson	745048 Kealahou St Kailua	334-9284
2)	Rene Savard	30 Box 2311 KEALAKEKUA HI. 96755	939 7201
3)	Marlene Lee	75-5249 Kapika St K.K. HI 96740	326-2502
4)	Lilani White	73-1141 Haimanama St KK HI 96740	325-0800
5)	Rachael Tetz	Box 867 Holealoea 96725	326-1870
6)	Karen Harty	PO Box 844 HONOLULU 96726	328-8566
7)	Peter Harty	PO Box 844 HONOLULU 96726	328-8566
8)	DEIDRE BOTT	73-1258 MELOMELA KK 96740	325-7304
9)	EVE DOOLAN	P.O. Box 1704 KEALAKEKUA 96750	MERMAIOEVE@HOTMAIL.COM
10)	JUDY RODMAN	73-1397 KARAU KK 96740	325-0668
11)	APRIL BURNS	Box 390435 KEAUHOU 96739	BACLAJ@HOTMAIL.COM
12)	JACKIE FINNERTY	77-360 PAULINA KK 96740	322-0017
13)	JACQUELYN WOODMANSEE	Box 1695 KK 96745	929-7092

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420 Waiulani Road
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Fax 808 842 1937
eMail rtwill@twillcorp.com



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Ms. Momi Subiono
May 23, 2001
Page Two

May 23, 2001

Ms. Momi Subiono
89-709 Lani Kona Road
Captain Cook, Hawaii 96704

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Ms. Subiono:

Thank you for your letter dated April 16, 2001, with regard to the above-referenced Draft Environmental Impact Statement (DEIS).

One copy of each petition received from you will be published in the Final EIS. In addition, petitions received from people other than yourself will be published in the FEIS.

Each of your letters received during the comment periods for the Environmental Impact Statement Preparation Notice and the Draft Environmental Impact Statement comment periods will be published in the FEIS, along with the associated responses.

Harbors Division cannot comment on the current General Plan revision program which is the responsibility of the County of Hawaii. With regard to your comments about the Office of Hawaiian Affairs, Harbors Division cannot respond on behalf of another organization.

The coral stockpile did not exist before the harbor was dredged. Expected demand for cargo handling will require greater development within the harbor, including the coral stockpile. The community has not "reclaimed" the area, rather the Harbors Division has allowed public access to the coral stockpile for recreational uses. Harbors Division expects to continue to allow public access to undeveloped areas of the harbor in the future.

We are not familiar with the "225,000 of Federal Funds" you mention with regard to "massive winter waves." If you provide more information Harbors Division would be willing to respond to your comment.

With regard to fishponds, oral history accounts cited in the DEIS are in agreement that there were fishponds near the current location of Kawaihae Harbor. The accounts noted that the fishponds were destroyed by the 1946 tidal wave and were never restored. With regard to actions of the Army Corps of Engineers, the decision was made long ago to dredge Kawaihae Harbor and permanently alter the shoreline. We note that the green sea turtle *Chelonia mydas*, known in the Kawaihae Harbor area, is a threatened rather than endangered species. Concerning turtles laying their eggs, the former beach is gone and turtles cannot lay their eggs on the coral stockpile. We agree that loss of natural coastline area would have diminished the amount of sand where turtles could lay their eggs.

The shells you list in this and previous DEIS comment letters to the Department of Transportation, are not threatened or endangered. DEIS comments received from the U.S. Department of the Interior, U.S. Fish & Wildlife Service, indicated to the Harbors Division that the DEIS "adequately describes the proposed action and the primary fish and wildlife resources located at the proposed project site." Harbors Division does not plan further study of the shells.

If you have any questions please call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga

Chester T. Koga
Project Manager

Cc: Department of Transportation, Harbors Division

WILLIAM J. CARTER, JR., M.D., M.P.H.
DIRECTOR OF HEALTH
DEPARTMENT OF HEALTH
HONOLULU, HAWAII 96813



BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96813

01 APR 20 P 3:10
April 20, 2001

In reply, please refer to:
File No.
01-0001/epo

Mr. Glenn Soma
April 20, 2001
Page 2

regulations cited in the DEIS. The Office of Solid Waste Management regulates facilities that process foreign wastes for disposal within the state. Therefore, all foreign waste removed from ships shall be directed to a State Department of Health permitted foreign waste facility. Other wastes (e.g. domestic municipal solid waste) generated aboard domestic ships shall also be disposed of at a State permitted solid waste facility.

2. Final disposition of incinerator ash generated by on-board incinerators shall be disposed of at a State Department of Health permitted municipal solid waste (MSW) ash monofills or other permitted disposal facilities approved by the Department of Health to accept solid waste ash.

Wastewater Branch

1. Wastewater collection for the Hilo Harbor area is handled by connection to the County of Hawaii sewer system. Therefore, we have no further concerns or comments as long as all wastewater is collected and handled by the County Sewer System.
2. Wastewater collection and disposal in the Kawaihae Harbor area is primarily handled by on site cesspools. The area is in a critical wastewater disposal area as determined by the Hawaii Wastewater Advisory Committee. No new cesspools will be allowed in this area. Continued use of existing cesspools is covered under the provisions of Hawaii Administrative Rule, Chapter 11-62. We recommend that a sewer master plan and centralized collection, treatment and disposal system be implemented.
3. All wastewater plans must conform to applicable provisions of the Department of Health Administrative Rules, Chapter 11-62, Wastewater Systems. We do reserve the right to review the detailed Wastewater plans for conformance to applicable rules. Please contact the Planning & Design Section of the Wastewater Branch at (808) 586-4294 if you have any questions.

Sincerely,

GARY GILL

Deputy Director
Environmental Health Administration

Mr. Glenn Soma
Harbors Division
Department of Transportation
79 South Nimitz Highway
Honolulu, Hawaii 96813

Dear Mr. Soma:

Subject: Draft Environmental Impact Statement - Hawaii Commercial Harbors 2020 Master Plan

Thank you for allowing us to review and comment on the subject document. We have the following comments to offer:

Clean Air Branch

In addition to the required elements, the branch is recommending that the Draft Environmental Impact Statement include an assessment or discussion on the following:

1. Air emissions from any equipment installed to support terminal facilities and the associated air pollution and permitting requirements; and
2. The emission increases and potential air quality impacts resulting from the increased size and volume of ships at dock. Potential air quality impacts may include, but are not limited to, impacts to visibility from stack emissions and ambient air quality impacts from ship equipment (diesel engine generators, boilers, incinerators) emissions generated while at dock.

Solid Waste Management Branch

Our comments focus on section 3.11 of the DEIS "Solid Waste and Hazardous Materials".

1. Foreign solid waste generated by carriers, which left foreign ports and their first port of entry to the United States is in Hawaii, must comply with the U.S. Department of Agriculture

420 Waiulani Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
eMail rmc@towill.com



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Mr. Gary Gill
May 16, 2001
Page Two

The FEIS will contain the following discussion relative to potential air quality impacts resulting from the size and volume of ships at dock:

The State of Hawaii, Department of Health (DOH), Clean Air Branch, noted during consultation that DOH has become aware that air quality monitoring is being performed near cruise ships at berth in major cruise destinations such as Alaska. DOH is currently considering implementation of a comparable monitoring program to encompass both air quality standards and the presence of "opacity" or readings of smoke from a ship's smokestack. Any citations for air pollution emissions or opacity will be levied by DOH on cruise ship owners. Harbors Division will cooperate with DOH by providing access to harbor facilities to perform air quality monitoring if such a program is implemented in the future.

Solid Waste Management Branch

Section 3.11.3 "Solid Waste Proposed Mitigation Measures" will include the following additional language:

Foreign solid waste generated by carriers, which left foreign ports and their first port of entry to the United States is Hawaii, must comply with the U.S. Department of Agriculture regulations cited in the DEIS. The Office of Solid Waste Management regulates facilities that process foreign wastes for disposal within the state. Therefore, all foreign waste removed from ships shall be directed to a State Department of Health permitted foreign waste facility. Other wastes (e.g. domestic municipal solid waste) generated aboard domestic cruise ships shall also be disposed of at a State permitted solid waste facility.

Any final disposition of incinerator ash generated by on-board incinerators of cruise ships shall be disposed of at a State Department of Health (DOH)-permitted municipal solid waste (MSW) ash monofills or other permitted disposal facilities approved by DOH to accept solid waste ash. Any cruise ship firm wishing to dispose of solid ash waste would have to meet Federal Resource Conservation and Recovery Act, Subtitle D requirements as imposed by individual DOH-approved landfills or disposal facilities.

May 16, 2001

Mr. Gary Gill
Deputy Director, Environmental Health Administration
State of Hawaii, Department of Health
Post Office Box 3378
Honolulu, Hawaii 96801

Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement

Dear Mr. Gill:

Thank you for your letter of April 20, 2001 which was received by the Department of Transportation, Harbors Division in which you provided comments on the above-referenced Draft Environmental Impact Statement (DEIS).

We have responded using the same headings contained in your comment letter.

Clean Air Branch

In response to your comments regarding air quality, the FEIS will contain the following discussion relative to air emissions from terminal equipment and the associated air pollution and permitting requirements. The revisions will be added to Section 3.14, Air Quality:

The State of Hawaii, Department of Health (DOH), Clean Air Branch, regulates emissions from certain types of equipment, such as generators and boilers, under Hawaii Administrative Rules, 11-60.1, Pollution Control. Currently no such equipment is anticipated at the proposed harbor facilities. However, if such equipment is utilized on harbor property in the future, equipment owners and/or operators will have to conform to air quality regulations cited above.

Mr. Gary Gill
May 16, 2001
Page Three

Wastewater Branch

With regard to item #1 relating to wastewater collection at Hilo Harbor, we note you have no further concerns or comments.

With regard to item #2 concerning wastewater collection at Kawaihae Harbor, the FEIS will contain the following addition to Section 3.12.3 Proposed Mitigation Measures (for wastewater collection):

The Kawaihae Harbor vicinity is in a critical wastewater disposal area as determined by the Hawaii Wastewater Advisory Committee. No new cesspools will be allowed in this area. Continued use of existing cesspools is covered under provisions of Hawaii Administrative Rules, Chapter 11-62, Wastewater Systems. Harbors Division will develop a sewer master plan for Kawaihae Harbor and analyze the feasibility of a centralized collection, treatment and disposal system that conforms to applicable provisions of Hawaii Administrative Rules, Chapter 11-62, Wastewater Systems.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division

DOCUMENT CAPTURED AS RECEIVED

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

Name	Address	Phone #
Dina Case	P.O. Box 411 Kamuela, Hawaii	887-1396
Pua Case	PO Box 6918 Kamuela, HI	885-5383
LEILA BERTELMANN	PO BOX 43700L KAMUELA HI	885-4287
Kehau Bertelmann	P.O. Box 472 Kamuela, Hawaii 96743	885-2140
Louie Sanchez	Box 437442 Kamuela, HI 96743	885-4950
Alita Bertelmann	Box 437155 " " "	887-1075
TONI LAD RADOR	PO BOX 1512 HONOKAA HI 96727	775-1322
ERIC MORTON	P.O. Box 1592 HONOKAA HI 96727	775-1322
STEWART P.K. BRANCO	PO Box 908 HONOKAA HI 96727	775-180671
Ann Kennedy	PO Box 831 Kamuela HI 96743	887-1323
Wala Phillips	P.O. Box 342 Kamuela HI 96743	885-1642
Karla Strain	40 Doha Ave. Hilo HI 96720	901-0122
Kelkoho Ferreira	P.O. Box 2336 Kamuela, HI 96743	885-4960

Please send all petitions to the State of Hawai'i Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

DNA
DIRECTOR'S OFFICE
OFFICE OF
PLANNING AND
REGISTRATION

Apr 23 1 07 PM '01

MARK D. AYERS
DNITRA AYERS
AYERS AUTOMOTIVE

74-5491 Kaiwi Street
Kailua Kona, Hawaii 96740
(808) 327-1311
(808) 327-9779
Ayersauto49@aol.com

April 20, 2001

To: Department of Transportation

From: Dnitra Ayers

To whom it may concern:

Attached please find several pages of petitions that I have had signed by local residents of the Big Island who are in opposition of the planned development of the Kawaihae Small Boat Harbor Master Plan 2020.

I personally am against the proposed storage of liquid bulk petroleum at the site mentioned. We are regular users of the beach there and find that it is one of the cleanest, safest, most precious beach on this side of the island. The shells that we find there can be very rare, and with some of the facts that I have learned recently, I hear are exclusive to that area. Kawaihae landing is a wonderful place to take our children. The water is clean, there are no waves and the access is easy. We enjoy the solitude that beach provides and would be saddened to lose it. We make every effort possible on weekends to clean up the rubbish that floats ashore and is left by others as there are no garbage cans provided. We take pride in "our beach".

Please review these petitions and know that they were signed by people who feel the same way as I do. I am not against progress, but I fear what would happen if there were to be a spill or even worse a tidal wave. Please consider these possibilities before you take away our beach.

Thank you very much.

Dnitra Ayers
Dnitra Ayers

DOCUMENT CAPTURED AS RECEIVED

Please sign if you're interested...
Thank you.

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

Name	Address	Phone #
DANIEL RICK	P.O. BOX 5211 KAILUA-KOHA HI 96745	323-3108
Cheryl Kahikoa	73-4329 HOLELOA CT 96740	325-5512
Melinda Verden	75-5874 WILUA RD, KK HI 96740	327-7744
DARRYN ELSTON	77-6501 SEAWAY CRT. KK HI 96740	386-0125
MAMI TAVARES	PO BOX 7 HILUAOIA HI 96725	326-2582

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939. Mahalo for signing and helping to protect our Coastline!

10/25/10
P.O. 4125101

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

Name	Address	Phone #
1) KIRI... LAMUNU...	P.O. BOX 871 KAILUA HI 96742	929-8228
2) MADITH LEENEY	P.O. BOX 281 KAWAHA HI 96743	885-5408
3) FRANK FRENEY	" " " " " " " "	" " " "
4) DEANNA KAHIKOA	68-3610 FLEDE ST WAILUA HI	96735
5) JULIANA KAWAHA	68-3610 FLEDE ST WAILUA HI	96735
6) DEANNA OMEROD	PO BOX 5653 KEAUA HI	96749
7) MAILE DANA	PO BOX 2346 KAWAHA HI 96743	885-8752
8)		
9)		
10)		
11)		
12)		

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Bj 413510

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#	Name	Address	Phone #
1)	Jolyon Dean	P.O. Box 451 Kamuela 96743	885-4783
2)	Kevin Kabei	75-402 Home St. K-K HI 96740	329-1970
3)	Michael McMillen	P.O. Box 2451 Kealahou 96750	324-0629
4)	Erin Jo Minamishin	73-445 Hahaione St. Hahaione HI 96746	960-9725
5)	Lance Owens	87-3211 Datura St Capt Cook	328-0234
6)	Debra	P.O. Box 390773 Kaneohe HI 96739	960-9626
7)	Bob Wilson	P.O. Box 437398 Kamuela 96743	887-0948
8)	[Signature]	P.O. Box 1071 Kealahou 96750	951-0909
9)	Kalani Kalani	P.O. Box 3634 Kailua Kona 96746	325-2505
10)	[Signature]	15-5635 Palani HI Kailua Kona 96746	334-0014
11)	[Signature]	P.O. Box 44402 Yamalo, HI 96743	882-7707
12)	[Signature]	P.O. Box 44402 Kailua, HI 96743	882-7707

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#	Name	Address	Phone #
1)	Lynn Freedy	P.O. Box 3276 Kailua Kona HI 96745	327-1505
2)	[Signature]	77-6108 Piilani St Kailua HI 96725	322-5225
3)	Barry Takunashi	73-431 Lulu St Kona, HI 96740	331-2509
4)	Margie Judy	73-1499 Apela Pl. Kailua-Kona	325-5190
5)	LuKe Achay	11-Boards 1 K-K HI	329-1323
6)	Jan + Judy	P.O. Box 1181 Kailua-Kona HI 96745	325-7325
7)	David P. Yonemura	73-1226 Lolaa Dr. Kailua-Kona, HI 96740	325-5377
8)	Julie Richwine	P.O. Box 604 K-K HI 96745	331-2700
9)	Eric Eder	141 Puako Beach Dr Kamuela HI 96743	882-7651
10)	[Signature]	P.O. Box 427 96745	325-3238
11)	John Ben	P.O. Box 561 96704	329-6152
12)	Gary McCollum	73-1083 Lolaa Dr 96740	

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

DOCUMENT CAPTURED AS RECEIVED

Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #	Page #
	Manuella M. M. M.	P.O. Box 203, K-K 96745	325-7287	1
	Cheryl Prince	75-5681 Koloa, HI	329-5369	
	Frank Adams	P.O. Box 482 - Napa, HI 96750	325-5799	
	Andrew Miller	75-5299 C Mamelaha Hwy, Hilo, HI 96725	324-1271	
	Michael Miller	P.O. Box 4687 K-K 96745		
	Kay Caddenworth	P.O. Box 390555 K-K 96739		
	John Miller	73-1316 N. Koloa St, K-K 96740	325-2007	
	Elizabeth Star	73-1501 Koloa, K-K 96740	325-2231	
	Robert Colon	P.O. Box 2496, Koloa, HI 96750	329-0274	

Lucy S. S. 75-5825 L. L. L. #1304 K-K 326-9476

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

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We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
1)	Michael P. Kennedy	P.O. Box 831, Kawaihae	887-4323
2)	Hillman Sheldon	58-780 Puna Rd	888-7271
3)	Patricia K. Rose	P.O. Box 219, Kapaau, HI 96755	889-0182
4)	Jared Eaton	Box 219 Kapaau HI 96755	889-0182
5)	Joseph G. Souza	Box 1874, Hilo, HI 96727	776-1190
6)	Tracey Pau	P.O. Box 1814, Hilo, HI 96727	776-1190
7)	James D. D.	Box 1295, Kapaau, HI 96755	888-7232
8)	Edward M. Michel	P.O. Box 881, Napa, HI 96772	929-8228
9)	August W. Summerfield	P.O. Box 5285, Kilauea, HI 96745	808-331-8733
10)	Yvonne M. Summerfield	" " " "	" "
11)	Taylor W. Summerfield	" " " "	" "
12)	Brennan Ayers	68-3776, Lealea Place, Wailoa, HI 96758	883-1277

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

Name: COLLEEN C. WRIGHT Address: P.O. BOX 1235 KEMAKEMUA, HI Phone #: 329-3791

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

Yaine
10/21/10

10/21/10
BB

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

Name	Address	Phone #
1) <i>Ryan Zink</i>	<i>22-1298 Kakaia Pl</i>	<i>325-1129</i>
2) <i>Tara Smyth</i>	<i>14-911 Hanalei St A205</i>	<i>534-0912</i>
3) <i>Pete McGill</i>	<i>73-317 B KAEALINA X2C 96741</i>	<i>329-8972</i>
4) <i>Paige Close</i>	<i>Box 4887 Kailua Kona 96745</i>	<i>528-9385</i>
5) <i>Kathleen Kang</i>	<i>PO BOX 2189 K-K, HI 96745</i>	<i>326-4086</i>
6) <i>Kip Larson</i>	<i>73-4152 Kailua Pt Kailua Kona 96745</i>	<i>322-0216</i>
7) <i>Teresa Nelson</i>	<i>73-4225 Eluna St K-K 96740</i>	
8) <i>Tina Koiso</i>	<i>73-4800 Ikaika Pl</i>	<i>326-0398</i>
9) <i>Carla Santos</i>	<i>70 Awa 1252 Kailua Kona 96745</i>	<i>326-1717</i>
10) <i>Brian [unclear]</i>	<i>P.O. Box 94-5149 Puuloa Pt.</i>	
11) <i>Sally [unclear]</i>	<i>P.O. Box 5112 Kailua Kona HI 96740</i>	

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

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We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

Name: Peter [Signature] Address: 75 317 E KAKILOA K-K 90224 328-9972
Tiara Heo 73-4250 A Kaunila St. K.K. 91240 325-6259

Please send all petitions to the State of Hawai'i, Department of Transportation, 969 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subiono 328-9939. Mahalo for signing and helping to protect our Coastline!

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

Name: Raige Clark Address: P.O. Box 4857 K-K, HI 96745 335-9025

Kawaihae Harbor expansion plans finds oppositio:

By BOBBY COMMAND
West Hawaii Today

A South Kona woman said she has quit her job as a Hawaiian studies teacher to devote her efforts to stopping a planned expansion at Kawaihae Harbor.

Momi Subiono, 33, said she is spearheading a petition drive demanding bulk petroleum storage areas not be built as proposed in the

Hawaii Commercial Harbors 2020 Master Plan.

The state Department of Transportation plans to spend \$150 to \$300 million for upgrades to Kawaihae and Hilo Harbors, which would take care of the Big Island's deep-draft harbor needs for the next 20 years.

State and petroleum company officials say a fuel farm at Kawaihae would make the distribution of fuel in West Hawaii more efficient as it would eliminate the need to truck it from Hilo, where it now is unloaded from fuel barges.

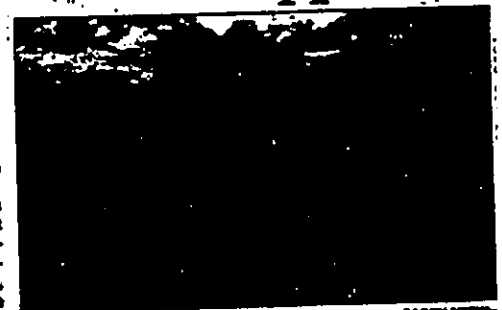
But the former Honaunau School teacher said that's not worth the risk of a potential spill or other dis-

aster at Kawaihae. "This is a tidal wave zone," she said. "There would be massive environmental damage if a tidal wave hit."

Subiono said she is also defending the rights of those who use the man-made coral beach at the south end of the harbor.

"This is our beach," Subiono said. "We're going to fight for it."

The proposed expansion of the deep-draft harbor that serves West Hawaii would include a bulk petroleum cargo terminal, dry bulk terminal, cargo container terminal, passenger terminal and ocean research facility, military cargo ter-



—BARON BROWN—
The coral/sand beach area at the south end of Kawaihae Har is the site of a proposed pier.

See NO NEW:
Page 4A

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testimony
Bog 4/23/01

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
1)	Melanie J. ...	73-1417 ... K.K.	322-2805
2)	Krista Kalsley	78-6934 B Waiward K.K. 96740	322-2805
3)	Melby ...	75-52	
4)	Philip ...	73-1213 ... DR K.K. HI 96740	322-2805
5)	Ryden ...	73-1219 ... ST U. Kona	315-6897
6)	MECA ...	75-317 P. KAKAI ... K.K.	329-3972
7)	Anna ...	PO Box 590748 Keauhou, HI 96739	331-3036
8)	Vina ...	33-4342 ... Kailua-Kona	325-2878
9)	John ...	71-403 ... Kailua-Kona HI 96740	351-8332
10)	Chris ...	731208 ... Kailua-Kona HI 96740	325-8729
11)	Pauline ...	75-317 ... Kailua-Kona HI 96740	329-3972
12)	Margaret ...	76-6717 Waiward Kailua-Kona HI 96740	322-7114

Please send all petitions to the State of Hawai'i, Department of Transportation, 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subison 328-8939 Mahalo for signing and helping to protect our Coastline!

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

#	Name	Address	Phone #
	Jane Phe	910 The Club - Kailua-Kona	326-2582
	Johanna Gault	73-1083 ... K.K. HI 96740	325-5318
	Colleen Sullivan	P.O. Box 4085 K.K. HI 96745	
	Kerri Lewis	75-338 ... K.K. HI	
	Herdi ...	PO Box 8044 Kailua-Kona	
	Jay ...	73-1400 ... K.K.	5-0321
	Don ...	75-5699 ... Kailua-Kona HI 96740	322-2582

Please send all petitions to the State of Hawai'i, Department of Transportation, 869 Punchbowl St. Honolulu, Hawai'i 96813-5097 or call Momi Subison 328-8939 Mahalo for signing and helping to protect our Coastline!

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1408 587 2500
11:12:25
01.1222

Postbox for Kawahine
3/6/01 10:31:52 PM Central Standard Time
To: momishells@hotmail.com (mom's subbox)
From: Malievow@aol.com

DIRECTOR'S OFFICE
DEPT. OF
TRANSPORTATION
APR 19 11 27 AM '01

We, the people of Hawaii County, do hereby "oppose" the development of Kawahine Small Boat Harbor in the State of Hawaii's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil should be stored in Kawahine's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in its entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawaii's Master Plan 2020 be killed.

Name Address Phone

Terence H.K. Kalahiki P.O. Box 1628 Kamuela HI 96740

William S. Watson P.O. Box 2441 Kamuela HI 96743

Helen Kurlansky P.O. Box 1167 " " "

Mary Lou Twaron 67-1247 Mamalahoe Hwy. Kamuela, HI 96743

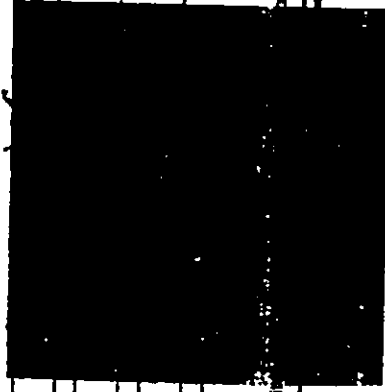
Michaela Drew Anne P.O. Box 453 Kamuela HI 96743

Robert H. Phipps 111. Bp 262 Kuu, HI 96743

Helen Rose P.O. Box 453 Kaunaloa HI 96743

City of Hilo P.O. Box 1383 Kamuela HI 96743

Rose Spencer Box 101 Wapahoehoe HI 96764



Encls: 1

Please send all postcards to: Post Office Box 666, Hilo, Hawaii 96720
Station 888 Punchbowl St. Honolulu, Hawaii 96813-5007

420 Waiulani Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1927
e-mail rmtowill@hawaii.rr.com



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Program Management
Surveying
Construction Management

Dnira Ayers
May 15, 2001
Page Two

May 23, 2001

Ms. Dnira Ayers
74-5491 Kaiwi Street
Kailua Kona, Hawaii 96740

Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement

Dear Ms. Ayers:

Thank you for your letter of April 20, 2001, in which you provided comments to the Department of Transportation on the above-referenced Draft Environmental Impact Statement (DEIS).

We acknowledge receipt of the petitions attached to your letter and will publish them in the Final Environmental Impact Statement.

As you state in your letter, the Department of Transportation, Harbors Division plans to develop a liquid bulk terminal in the coral stockpile area of Kawaihae Harbor. You may not be aware that all of the petroleum currently used by West Hawaii, including jet fuel for Kona International Airport, is trucked across the island from Hilo Harbor. The liquid bulk terminal would allow petroleum products to be offloaded from vessels and stored at Kawaihae Harbor, thus precluding dangerous transit of fuel across the island.

The liquid bulk terminal will occupy only a portion of the coral stockpile area. The U.S. Army-controlled LST/LSV underwater ramp area will still be available for outdoor recreation by the community. Harbors Division is required to maintain access to the harbor area by the U.S. Army Corps of Engineers. The area you refer to as "our beach" is a commercial harbor. Harbors Division allows recreational activities within its harbors as long as personal safety and critical harbor operations are not compromised.

With regard to your comments about shells, the shells now found at the coral stockpile are not under Federal protection as threatened or endangered species. The DEIS states on page 3-30, "According to wildlife biologists at the U.S. Fish & Wildlife Service, these mollusks are common and were most likely dredged from former coral reefs as opposed to something that grows there now."

Regarding the liquid bulk terminal, any such facility will be constructed under strict environmental and construction standards for spill containment as disclosed in the Draft Environmental Impact Statement in Section 3.15, Water Quality. In addition, Kawaihae Harbor is equipped with spill containment apparatus today.

With regard to tsunami, as a shoreline area, the harbor will always susceptible to the forces of nature, which is acknowledged in the Draft Environmental Impact Statement in Section 3.6, Natural Hazards.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division

DIRECTOR'S OFFICE
DEPT. OF
TRANSPORTATION
APR 23. 2 19 PM '01

400
DIVE

April 20, 2001

Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

To Whom It May Concern:

My name is Robina Subiono, I am writing in opposition to of the Kawaihae Small Boat Harbor in the State of Hawaii Master Plan 2020. Personally it has been a place that our family has gathered at for years. My Mother's funeral was held on that very shore. Her Ashes are in the harbor as it was her request to be scattered there as it would be where her family would continue to gather. Our small children can swim in the safe shallow waters and the older ones can venture out a ways, others can sit on the shore and gather the indigenous shells that are hidden beneath the rocks and taking the shore. I have no big words or ideas to speak to you to beseech you to hear the cry of one local resident. But it is a place where we frequently go, as many do. I know its Hawaiian seeded land, and I am Hawaiian thus heir to some land rights. I know that the Bible tells us not to remove the ancient landmarks of our Fathers...perhaps God knew sometimes our skills and modern day technologies would dim our hearts to the land of our birth, and its value to the people. Money and increasing of moles sometimes desensitizes our hearts, but a prayerful pause could easily bring the revelation of alternative means of revenue and yet keep the heart of the land as ours purposed for the people.

Please consider my letter and the value of these lands that it hold for me and my family. I am one vote but many can be heard through me if you would take the moment to ponder it. I trust the our Great Akua will show you. Mahalo for your time.

O Wau Iko No,

Robina Nalani Subiono

Robina Nalani Subiono
Big Island Resident

return enclosure / petition with signatures (a copy has be retained.)

We, the people of Hawai'i County, do hereby "oppose" the development of Kawaihae Small Boat Harbor in the State of Hawai'i's Master Plan 2020. We do not agree that Liquid bulk petroleum or oil, should be stored in Kawaihae's fragile ecosystem and we demand that the Community be allowed to continue to use the beach, in it's entirety for Recreational and gathering area forever. We also feel the Cultural Significance for the whole area and demand that the State of Hawai'i's Master Plan 2020 be killed.

Name Address Phone #7.0. 289 1742

1. *DAVE DORRIS - 473 6163 17743 23*
2. *Paul TRUMER, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
3. *Spencer King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
4. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
5. *Kelly King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
6. *Robina Subiono, P.O. Box 191, Kawaihae, HI 96741*
7. *Robina Subiono, P.O. Box 191, Kawaihae, HI 96741*
8. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
9. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
10. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
11. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
12. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
13. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
14. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
15. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
16. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
17. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
18. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
19. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
20. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
21. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
22. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
23. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
24. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
25. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
26. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*
27. *John King, 1011 W. KAWAIIA RD, KAWAIIA HI 96741*

Please send all petitions to the State of Hawai'i, Department of Transportation 869 Punchbowl St. Honolulu, Hawai'i 96813-5097

or call Momi Subiono 328-8939 Mahalo for signing and helping to protect our Coastline!

420 Waiulani Road
Suite 411
Honolulu, Hawaii 96817-4941
Telephone 808 842 1133
Fax 808 842 1937
email rmtowill@towill.com



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May 16, 2001

Ms. Robina Najani Subiono
64-273 Puu Pulehu Loop
Kamuela, Hawaii 96743

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Ms Subiono:

Thank you for your letter dated April 20, 2001 which was addressed to the Department of Transportation in which you provided comments on the above-referenced Draft Environmental Impact Statement (DEIS). We obtained your address through your published listing with telephone Directory Assistance since you provided no return address in your letter.

The "Kawaihae Small Boat Harbor" is a facility under the jurisdiction of the State of Hawaii, Department of Land and Natural Resources (DLNR). Unfortunately, Harbors Division cannot respond for another agency. To speak to a responsible person concerning the Small Boat Harbor at Kawaihae, please contact Mr. Darryl Quinocho, Acting District Manager, DLNR Boating District Office, at (808) 329-4215. His mailing address is 74-380 Kealahou Parkway, Kailua-Kona, Hawaii 96740.

We appreciate your taking time to send your comments. We will publish your letter and the attached petition in the Final Environmental Impact Statement. If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga, AICP
Project Manager



BENJAMIN J. CAYETANO
Deputy Director



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

375 SOUTH BERTANINI STREET
HONOLULU, HAWAII 96813
TELEPHONE: (808) 532-4199
FACSIMILE: (808) 532-4188

April 23, 2001

Brian Minzani
Department of Transportation
Harbors Division
79 S. Nimitz Highway
Honolulu, HI 96817

Attn: Glenn Soma

Dear Mr. Minzani:

Subject: Draft Environmental Impact Statement (EIS), Hawaii Commercial Harbors 2010
Master Plan

We have the following comments to offer:

Summary section: The following are required in a concise discussion in the summary section:

- Significant beneficial and adverse impacts
- Proposed mitigation measures
- Alternatives considered
- Unresolved issues
- Compatibility with land use plans and policies
- listing of permits or approvals

Project costs: Disclosure of expenditure of state funds, including federal funds flowing through the state, is required by law. If exact amounts are not known, you may give a possible range of expenditures. Your response to our comment on the EIS preparation notice on this indicated that it would be included in the draft EIS, but it is not. Be sure to include it in the final EIS.

Impacts:

- a. Your response to Momi Subiono's letter indicated that a discussion of real estate trends would be included in the draft EIS, but is not. The EIS law requires a discussion that covers the direct and indirect (secondary) effects and the population and growth impacts of the project.
- b. Include a discussion of probable adverse impacts that cannot be avoided.

Related projects: The EIS law requires a discussion of geographically related projects for each region. This includes both public and private, and existing or planned projects. Also required is an analysis of

Brian Minzani
April 23, 2001
Page 2

cumulative impacts of the each harbor project and others in the same region. The analysis should include the factors of population growth or shifts, traffic, noise, air quality, water resources, and drainage.

Permits: In the table in chapter 6 indicate the status of the various permits. If a permit application has not yet been filed, list the anticipated date of filing

Relationship to land use plans and policies: The following sections need a fuller discussion, including any conflicts which exist, and the rationale for proceeding in spite of conflicts:

- a. Marine Sanctuaries Act (section 5.2.9)
- b. Coastal zone management (section 5.3.4)
- c. Hawaii County general plan (sec. 5.4.1)

Unresolved issues: Include a section that discusses these issues, when and how they will be resolved or the reasons why the action will proceed if they are not resolved. A synopsis of this discussion must appear in the summary section of the final EIS.

Acronyms and technical terms: In the final EIS include the acronym SWCD (found in chapter 7) in the acronyms list. Also include a definition of "briarid" (found in chapter 3).

Figures and tables: Please make the following corrections:

- Figure 11 (Wind Patterns) legend needs correction
- Table 5 (LOS) needs to indicate units in the Density columns
- Table 9 (Marine Biology survey): indicate the number of individuals of green sea turtles
- Figure 27 (Ceded Land, Hilo) needs a clear inset
- Figure 28 (Ceded Land, Kawaihae) should indicate square footage as in Fig. 27

Preparers: Include a list of all persons or firms preparing the EIS.

Title page signature: The director or director-in-charge of the applicant agency is required to sign the environmental impact statement and indicate that it and all ancillary documents were prepared under the signatory's direction. This is required by § 11-200-20d of Hawaii Administrative Rules. Be sure this is included in the final EIS. Submit the FEIS copy with the original signature to this office.

If you have any questions call Nancy Heinrich at 586-4185.

Sincerely,

GENEVIEVE SALMONSON
Director

c: Gail Atwater

P. 1 1125-886 (808)

Apr 23 01 10:11a

P. 2

1125-886 (808)

Apr 23 01 10:11a

470 Wai'anae Road
Suite 411
Honolulu, Hawaii 96817-6941
Telephone 808 842 1133
Fax 808 842 1937
eMail info@rmwill.com



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Surveying
Construction Management

Ms. Genevieve Salmonson
May 25, 2001
Page Two

May 29, 2001

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

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Ms. Salmonson:

Thank you for your letter of April 23, 2001 addressed to the Department of Transportation, Harbors Division, in which you provided comments on the above-referenced Draft Environmental Impact Statement (DEIS).

We have responded to your comments using the same headings provided in your letter.

Summary Section

The Final Environmental Impact Statement (FEIS) will contain the required information in Chapter 1, "Project Summary."

- Significant beneficial and adverse impacts
- Proposed mitigation measures
- Alternatives considered
- Unresolved issues
- Compatibility with land use plans and policies
- Listing of permits or approvals, including approximate time frames for permit applications.

Project Costs

The FEIS will include an additional statement in Section 2.6, Schedule and Cost, indicating that "State of Hawaii funds and land will be utilized for the proposed harbor development. No federal funds will be used."

Impacts

In further consultation with your staff regarding discussion of real estate impacts, the FEIS will be revised in Section 2.3.2, "Demand Factors for Harbor Facilities: Cargo and Cruise Ship Arrivals." The FEIS will explain why building permits are an indicator of real estate trends and provide information about the residential and commercial rental market on the Island of Hawaii based on interviews with realtors. Finally, the FEIS will summarize the discussion of real estate trends.

Concerning adverse impacts that cannot be avoided, any such impacts will be disclosed in Chapters 3 and 4 in the discussion of potential impacts and proposed mitigation measures.

Related Projects

In Chapter 5, "Relationship to Plans, Policies and Controls," the FEIS will discuss geographically related projects and plans based on additional agency consultation with the County of Hawaii Planning Department, the State Office of Planning, the Department of Hawaiian Home Lands and the State Land Use Commission. The FEIS will also discuss the cumulative impact of related projects and plans.

Permits

Chapter 1, Project Summary, and Chapter 6, "Necessary Permits and Approvals," will provide information about the order in which permits may be applied for by the Department of Transportation, Harbors Division. In Chapter 1, Project Summary, the FEIS will contain the following information:

Listing of Necessary Permits and Approvals

Applicable permits and approvals that may be required for the proposed action include the following, in order of application:

1. Coastal Zone Management Federal Consistency Certification, issued by the Office of Planning, State Department of Business Economic Development and Tourism
2. Section 401 Water Quality Certification, issued by the State Department of Health
3. Department of the Army Permit, issued by the U.S. Army Corps of Engineers
4. Conservation District Use Permit, issued by the State Department of Land and Natural Resources
5. Shore and Shorewaters Permit, issued by the State Department of Land and Natural Resources
6. Shoreline Certification, determined by State Department of Accounting and General Services and State Department of Land and Natural Resources

7. *Historic Preservation and Federal Section 106 Review, by State Department of Land and Natural Resources*
8. *Federal Section 106 Review, Protection of Historic Properties, by the State Department of Land and Natural Resources*
9. *National Pollutant Discharge Elimination System Permit, issued by State Department of Health*
10. *Permit to Construct a Wastewater System, issued by State Department of Health*
11. *Hazardous Waste Permit, issued by State Department of Health*
12. *Non-Covered Source Air Permit, issued by State Department of Health*
13. *Asbestos Regulations, State Department of Health*
14. *State Highways Permit, issued by State Department of Transportation*
15. *Section 103 Marine Protection, Research and Sanctuaries Act, issued by the U.S. Army Corps of Engineers*
16. *Public Lands Dispositions, by State Department of Land and Natural Resources*
17. *Special Management Area Permit, issued by the County of Hawaii, Planning Department**
18. *Shoreline Setback Variance, issued by the County of Hawaii, Planning Department**
19. *Flood Hazard Controls, issued by the County of Hawaii, Department of Public Works**
20. *Grading, Grubbing, Excavating and Stockpiling Permits, issued by the County of Hawaii, Department of Public Works**
21. *Building Permit, issued by the County of Hawaii, Department of Public Works**

* County of Hawaii permits are not required for actions taken by Harbors Division, pursuant to Section 266-2(b), *Hawaii Revised Statutes*. However, actions taken by tenants on Harbors Division property would be subject to County of Hawaii permitting.

Relationship to Plans and Policies

The FEIS will contain amplified discussion in Section 5.2 concerning the Marine Sanctuaries Act and Coastal Zone Management Act and in Section 5.4 concerning the Hawaii County General Plan, as well as discussion of how these plans and policies relate to the project and whether there are any conflicts.

Unresolved Issues

The FEIS will include a new section entitled "Unresolved Issues."

Acronyms and Technical Terms

With regard to the acronym "SWCD" found on page 7-8 of the DEIS, the final EIS will spell this out as follows on the same page: "Mauna Kea Soil and Water Conservation District".

The definition of balanid will be included in the FEIS Chapter 11, Glossary, as follows: *Balanid: A term referring to a family of acorn barnacles, i.e. Family Balanidae.*

FIGURES AND TABLES

DEIS Figure 11 (Wind Patterns) – the revised figure will be included in the FEIS.

Table 5 – "LOS" – discussion prior to Table 5 will read as follows in the FEIS: "Density is the number of vehicles per lane-mile on a segment of roadway. Density is dependent on the number of lanes, volume (rate of flow in vehicles per hour), and speed of the traffic stream (in miles per hour)."

Table 9 (Marine Biology survey): the FEIS will include the number of individual green sea turtles observed in Table 9 and also in Table 10. In each of these tables the FEIS text will note "one individual observed."

DEIS Figure 27 (Ceded Land, Hilo) – the revised figure with a more clearly presented inset will be included in the FEIS.

DEIS Figure 28 (Ceded Land, Kawaihae) – the revised figure will be included in the FEIS and contain the following addition to the legend: "Area of ceded lands = approximately 72 acres, including the breakwater area."

PREPARERS

The FEIS will include the following list of persons and firms who prepared the FEIS as a new chapter number 14 entitled "List of Preparers."

<u>Preparer</u>	<u>Project Role</u>
<i>R.M. Towill Corporation</i>	<i>Project Manager for EIS Preparation</i>
<i>Chester T. Koga, AICP</i>	<i>EIS Preparer; Oral History</i>
<i>Gail W. Ahtwater, AICP</i>	<i>Environmental Site Assessments</i>
<i>David Gerow</i>	<i>Traffic Impact Analysis</i>
<i>Julian Ng, Incorporated</i>	
<i>Julian Ng, P.E.</i>	

Ms. Genevieve Salmonson
May 25, 2001
Page Five

<u>Preparer</u>	<u>Project Role (continued)</u>
Char & Associates, Inc. Winona P. Char	Botanical Surveys
AECOS, Inc. S. A. Cattell S. Coles E. Gulnather	Marine Biology and Water Quality Analyses
Haun & Associates Alan Haun, Ph.D	Archaeological Inventory Survey, Hilo Harbor

Title Page

The Director of Transportation will sign a new title page with the following verbiage accompanying the signature line: "This statement and all ancillary documents were prepared under my direction and, to the best of my knowledge, address the content requirements as set forth in HAR 11-200-17 and 11-200-18, as appropriate." The FEIS copy with the original signature of the Director, State of Hawaii, Department of Transportation, will be forwarded to OEQC.

If you have any questions please call me or Gail Atwater at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division



DATE: April 23, 2001

TO: Mr. Glen Soma - DOT Engineer (808) 587-2504 - Facsimile

FR: Josephine Keilipio - West Hawaii Resident
P.O. Box 368
Kealahou, HI 96750

RE: Draft Environmental Impact Statement for
Hawaii Commercial Harbor's Master Plan 2020

Dear Mr. Soma,

I am appalled that your master plan continues to work against helping our island to achieve sustainable and self-sufficient goals by making us more and more dependent on out of State imports. Perhaps if we were less dependent on outside goods, DOT would not have to expand the Kawaihae harbor to such extreme proportions. Shame on DOT!

The coral beach just inside of the Army's LST area has been a longtime, safe, swimming spot for our local families. Just yesterday, I observed families with youngsters picnicking along this area. My own dogs were even able to wade in and swim for the first time in their lives. Your plan to turn this beach into an inter-island pier means that you will be robbing our local families from a valuable quality-of-life resource. This area should be turned into a park instead. I think the State should be looking out for its local folks first before accommodating more and more tourists and bulk items. The nearby public parks are already over-used and over-crowded and this is the only safe and swimmable spot left for our locals to unwind and appreciate. Shame again on DOT for ignoring this fact in your plan and squeezing the locals out of places that give them a sense of place. (NOTE: I am not talking about the surf spot as it accommodates older folks and is located outside of the break wall).

Your plan to build more and more fuel tanks out toward the LST area is a destructive one. It only shows us how continually insensitive you are to the environment. You should locate those tanks in the area next to Kawaihae Road only.

I am further appalled at your plans to build a small boat harbor that reflects your destructive Honolulu style. We should be learning from Oahu's mistakes by not continuing to build trashy boat harbors that look like the Ala Wai and Kewalo Basin small boat harbors. How shameful! Out of respect to the cultural sites just next to this property, I think the small boat harbor plans should be dumped and instead, the area should be turned into a huge park.

Your plans are harmful and insensitive to the cultural environment and local lifestyle. Please redo them. Thanks.

Josephine Keilipio
(808) 326-7998

620 Waiānana Road
Suite 411
Honolulu, Hawaii 96817-4941
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eMail rmtowill@hawaii.com



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Planning
Engineering
Environmental Services
Photogrammetry
Surveying
Construction Management

Ms. Josephine Keliipio
May 15, 2001
Page Two

May 15, 2001

Ms. Josephine Keliipio
Post Office Box 368
Kealahou, Hawaii 96750

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Ms. Keliipio:

Thank you for your letter dated April 23, 2001 to Mr. Glenn Soma of the Department of Transportation in which you provided comments on the above-referenced Draft Environmental Impact Statement (DEIS).

With regard to your comment concerning sustainable development, the Department of Transportation, Harbors Division (hereafter Harbors Division) is mandated to provide adequate harbor infrastructure for future increases in demand for facilities. The Department cannot control the level of residents' dependency on imports.

With regard to your comment concerning the planned Liquid Bulk Terminal at Kawaihae Harbor, please note that the location of the Liquid Bulk Terminal parcel fronts Kawaihae Road. The 2020 Master Plan preserves the Pelikane land area of Harbors Division property under cooperative agreement with the U.S. Department of the Interior, National Parks Service. Since that parcel runs along Kawaihae Road, the liquid bulk terminal could not be located there. The current level of design of the liquid bulk terminal calls for the tanks to be set back from the shoreline. Harbors Division acknowledges that there will be greater potential for damage to the environment with increased bulk storage at the harbor. However, any new terminal will be designed, constructed and managed under stringent environmental guidelines that are meant to contain and prevent spills.

With regard to your comment about development of small boat harbors, in which you reference the Ala Wai and Kewalo Basin on Oahu, please be advised that the small boat harbors to the north and south of the commercial harbor at Kawaihae are administered and developed by the State of Hawaii, Department of Land and Natural Resources. Please address your comments regarding the nature of small boat harbor development to the agency which has the authority to respond.

With regard to your comment that "your plans are harmful and insensitive to the cultural environment and local lifestyle," in the subject DEIS, Harbors Division has made every effort to disclose potential harm to the environment from proposed harbor development, and, where necessary, has proposed mitigation measures to minimize environmental and cultural impacts. Some social impacts, such as reduced area where the public can engage in waterfront activities in the coral stockpile, are unavoidable if Harbors Division is to be able to meet its mandate of providing essential commercial harbor infrastructure to the State of Hawaii. The foremost concern of Harbors Division at Kawaihae Harbor is commercial shipping, not public recreation. The military cargo terminal is under Governor's Executive Order to the U.S. Army. Harbors Division has no intention of developing the Army's terminal and the "beach" inside that area.

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecotone
300 Ala Moana Boulevard, Room 3-172
Box 50088
Honolulu, Hawaii 96850

APR 23 2001

In reply refer to: ER-01-106

Glenn Soma
State of Hawaii
Department of Transportation
Harbors Division
79 S. Nimitz Highway
Honolulu, Hawaii 96813

Re: Draft Environmental Impact Statement for the Hawaii Commercial Harbors 2020 Master Plan, Island of Hawaii, Hawaii

Dear Mr. Soma:

The U.S. Fish and Wildlife Service (Service) has reviewed the March 2001 Draft Environmental Impact Statement (DEIS) for the above referenced project. The project sponsor is the State of Hawaii, Department of Transportation, Harbors Division. The DEIS was prepared by R.M. Towill Corporation. The Service offers the following comments for your consideration.

The purpose of the proposed project is to implement harbor improvements at Hilo Harbor and Kawaihae Harbor on the island of Hawaii. Infrastructure improvements are needed at both harbors to accommodate projected increases in shipping traffic. The State of Hawaii anticipates a significant increase in the number of vessels that dock, off-load and take-on cargo and passengers at these harbors as support for inter-island commerce and the cruise ship industry to

Proposed harbor improvements include the construction of land-based support facilities, construction and modifications of piers and dolphins, and dredging the harbor bottom to accommodate berthing vessels. At Hilo Harbor, the proposed project involves construction of three piers (4, 5 and 6) from concrete; constructing dolphins at the end of piers 2 and 3; dredging the harbor to create pier berths by using cutterhead technology; and constructing land-based terminals and access roads. At Kawaihae Harbor, three new piers would be constructed; the harbor would be dredged to create pier berths, and blasting technology would be used to remove underlying coral surfaces; and land-based terminals and access roads would be constructed.

GENERAL COMMENTS

In general, the Service believes that the DEIS adequately describes the proposed action and the primary fish and wildlife resources located at the proposed project site. However, the Service believes that the DEIS does not fully explore other alternatives to the use of blasting technology that may reduce impacts to fish and wildlife resources. We are concerned that the controlled use of under water explosives to loosen the hardened substrate may accidentally injure or kill federally protected Hawaiian green sea turtles (*Chelonia mydas*), which are known to occur in the vicinity of the proposed project sites. Therefore, we recommend that the DEIS be revised to assess the use of alternative technologies, in place of under water blasting techniques, used to accomplish the same goal and avoid potential impacts to green sea turtles.

Also, we are concerned that not all of the anticipated, project-related impacts to fish and wildlife resources have been adequately addressed in the DEIS. Potential impacts to coral reef resources may result from the proposed in-water construction-related activities. We believe that direct impacts to coral species may result from the construction of the proposed piers and dolphins, as well as from dredging activities to create pier berths. We recommend that the revised DEIS describe the footprint of the proposed piers and dolphins and pier berths in terms of total benthic acreage displaced by the proposed project. Furthermore, we recommend that coral coverage be described within the footprint of each of the proposed project sites. Total acreage and coral coverage of coral resources that occur within the footprint should be described quantitatively for each site. Finally, we recommend that a mitigation plan be developed in cooperation with natural resource agencies (e.g. the Department of Land and Natural Resources/ Division of Aquatic Resources, National Marine Fisheries Service (NMFS) and the Service) and used to compensate for direct impacts to coral-reef resources. We recommend that the proposed mitigation be commensurate with coral-reef resources impacted by the proposed action.

The DEIS does not adequately address the potential for the proposed project to result in the introduction of alien species to the terrestrial and marine environments of Hawaii island and their associated impacts to fish and wildlife resources. We are concerned that an increase in foreign vessels or vessels that may offload cargo may result in the accidental introduction of alien species. We are concerned that passengers aboard foreign cruise ships may accidentally introduce alien plants, insects or animals that could potentially become established and impact native species. We recommend that an education regime be developed to help visitors become aware of the many rare species that are protected by state and federal laws in Hawaii. Also, we recommend that the details of cruise ship inspections for alien species be discussed in the revised DEIS.

We are concerned that alien species introductions could result via cargo containers that arrive from foreign ports or Guam, where invasive species, such as the brown tree snake, could become established and impact native species. We recommend that the revised DEIS describe the details for conducting regular inspections of cargo for invasive alien species. Furthermore, we recommend that specific protocols regarding interdiction and control of the brown tree snake be

described in the revised DEIS.

Also, we are concerned with the potential introduction of marine alien species to both harbors via ballastwater, gray water or hull-growth. Seventy percent of marine alien species in Hawaiian waters have been introduced via hull growth (L. Eldredge pers. comm April, 2001). We are concerned that foreign cruise ships may serve as vectors for species that may potentially become established, outcompete, and displace native Hawaiian marine organisms. We are concerned that invasive species may be introduced from distant temperate regions (S. Apte *et al.* 2000), as well as tropical and sub-tropical locations from around the world (R.A. Englund *et al.* 2000, S.L. Coles *et al.* 1999, DOD Legacy Project # 106 1997). Therefore, we recommend that the revised DEIS include a discussion of protocols that can be used to rank vessels according to their relative risk of introducing marine alien species to Hawaiian waters. The protocols should include a scheme for notifying state and federal agencies when the risk of introduction is high. Agencies would respond by conducting vessel inspections and taking appropriate action to prevent the introduction. Finally, we recommend that these protocols be developed in cooperation with the State of Hawaii's Division of Aquatic Resources, Department of Agriculture, the National Marine Fisheries Service, the U.S. Department of Agriculture, and the U.S. Fish and Wildlife Service.

SPECIFIC COMMENTS

Pg. 2-22.2.5.1 Interisland Terminal Facilities Paragraph 4, Sentence 1: The DEIS states that "A typical general cargo facility such as an interisland terminal has berths capable of accommodating vessels up to 800 feet in length and maximum draft of 35 feet, although interisland operations at the two subject harbors are served by barges that currently measure only approximately 350 feet." We do not understand the purpose for constructing berths to accommodate vessels up to 800 feet in length when you state that vessels of only 350 feet may use them. We recommend that the revised DEIS clarify this point.

Pg. 2-23.2.5.5 Construction of Piers and Dolphins - Hilo Harbor Projects Paragraph 4, Sentence 1: The DEIS states that "The 2020 Master Plan calls for construction of dolphins at the end of Piers 2 and 3 and proposed Piers, 4, 5 and 6." There is no description of the relative dimensions of each pier or dolphin. Since the construction of these piers and dolphins may impact coral reef resources within the harbor, we recommend that the revised DEIS provide a description of the footprint and dimensions of the proposed piers.

Pg. 2-25.2.5.5 Construction of Piers and Dolphins - Kawaihae Harbor Projects Paragraph 5, Sentence 1: The DEIS states that "The 2020 Master Plan pier projects at Kawaihae include the addition of three new piers." However, this document does not describe the relative dimensions of each pier. Since the construction of these piers may impact coral reef resources within the harbor, we recommend that the revised DEIS provide a description of the footprint and dimensions of the proposed piers.

Pg. 2-24. Table 2. Marine Biological Survey Summary - Hilo Harbor, September 2000 This table lists the status of marine organisms by federally protected status "threatened," "endangered," and then by group such as "microalgae," "invertebrates," and "fish." However, this table does not indicate the number of species observed that were indigenous or endemic to Hawaii. Since you indicate this status for terrestrial organisms, we recommend that you make this document consistent in its treatment of biological organisms and identify whether any of the marine species observed during the survey are considered indigenous or endemic to Hawaii.

Pg. 2-24. Table 10. Marine Biological Survey Summary - Kawaihae Harbor, September 2000 This table lists the status of marine organisms by federally protected status "threatened," "endangered," and then by group such as "microalgae," "invertebrates," and "fish." However, this table does not indicate the number of species observed that were indigenous or endemic to Hawaii. Since you indicate this status for terrestrial organisms, we recommend that you make this document consistent in its treatment of biological organisms and identify whether any of the marine species observed during the survey are considered indigenous or endemic to Hawaii.

Pg. 3-27. Kawaihae Harbor Paragraph 1, Sentence 4: The DEIS states that, "It is likely that the proposed development/expansion within the harbor basin will continue this transition to fewer near-shore coastal invertebrates and fishes, with generally reduced overall diversity." We interpret this statement to indicate that negative impacts can be anticipated for the marine organisms that occur at the proposed project site. In contrast, paragraph 3 Sentence 5: "That 'Coral may similarly regenerate in the future following proposed dredging of harbor areas.' If the previous statement holds true, then this statement may not be accurate since fewer species of coral may be expected to colonize the benthic substrate after the harbor has been dredged. Therefore, the proposed action may have a negative affect upon coral resources that occur within the project site and the revised DEIS should assess this impact."

Pg. 3-35. Hull-Growth Paragraph 3, Sentence 2: The DEIS states that "Hull-growth tends to occur when ships stay at anchor or in harbors for extended periods of time, giving organisms a chance to establish themselves." S. Apte (*et al.* 2000) demonstrated that the smooth shelled blue mussel (*Mytilus galloprovincialis*), alien to Hawaiian waters, became established within the ballast tank of a submarine that was moored in Pearl Harbor, shortly after the mussel arrived on the hull of the U.S.S. Missouri in the summer of 1998. Therefore, we recommend that this statement be modified to indicate that alien species may need little time to transfer from host vessels to other vessels and spread to other harbors.

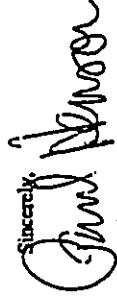
SUMMARY

The Service believes that the DSEIS does not adequately assess all inwater construction and dredging-related impacts to coral-reef resources. Furthermore, we do not believe that adequate mitigation for the potential loss of coral-reef resources has been identified in the DEIS.

We also believe that the introduction of alien species may continue to pose threats to terrestrial

and marine organisms that occur in the vicinity of Hilo and Kawaihae harbors. To help minimize this risk, we recommend that an education program be developed to help visitors on cruise ships become aware of the many rare and protected species that State and Federal laws protect in Hawaii. Also, we recommend that the revised DEIS discuss the details of cruise ship inspections for alien species. We recommend that the revised DEIS include a discussion of proposed protocols that would be used to rank vessels according to their relative risk for introducing marine alien species to Hawaiian waters and a scheme for notifying State and Federal agencies when the risk of introduction is high.

The Service appreciates the opportunity to comment on the DEIS. If you have any questions or concerns, please contact Fish and Wildlife Biologist Kevin Foster (808/541-3441).

Sincerely,

Paul Hanson
Field Supervisor
Ecological Services

- cc: NMFS- PIAO, Honolulu
- EPA-Region IX, Honolulu
- DLNR, Hawaii
- DAR, Hawaii
- CZMP, Hawaii
- CWB, Hawaii

References

Smita Apie, Brenden S. Holland, L. Scott Godwin, and Jonathan P. A. Gardner. 2000. *Jumping Ship: a stepping stone event mediating transfer of a non-indigenous species via a potentially unsuitable environment*. *Biological Invasions*: 2: 75-79, 2000. Kluwer Academic Publishers. Printed in the Netherlands.

Department of Defense Legacy Project Number 106. August 106. *Biodiversity of Marine Communities in Pearl Harbor, Oahu, Hawaii with Observations on Introduced Exotic Species*. Published by the Bishop Museum Press, Honolulu, Hawaii ISSN 1085-455X. Contribution No. 1997-014 to the Hawaii Biological Survey.

S.L.Coles, R.C. DeFelice, L.G. Eldredge. 1997. *Nonindigenous Marine Species Introductions in the Harbors of the South and West Shores of Oahu, Hawaii*. Bishop Museum Technical Report No. 15. Hawaii Biological Survey. Published by the Bishop Museum Press.

R.A. Englund, K. Arakaki, D.J. Preston, S.L. Coles, and L.G. Eldredge. 2000. *Nonindigenous Freshwater and Estuarine Species Introductions and their potential to affect sportfishing in the lower stream and estuarine regions of the south and west shores of Oahu, Hawaii*. Bishop Museum Technical Report No. 17. Hawaii Biological Survey. Published by the Bishop Museum Press.

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May 31, 2001

Mr. Paul Henson, Field Supervisor
Ecological Services
United States Department of the Interior
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement

Dear Mr. Henson:

Thank you for your letter of April 23, 2001 which was received by the Department of Transportation, Harbors Division in which you provided comments on the above-referenced Draft Environmental Impact Statement (DEIS).

Responses to the section of your letter entitled "General Comments:"

Use of Blasting Technology

With regard to concerns about underwater blasting, Harbors Division will explore the feasibility of using other technologies as an alternative to blasting, such as the use of cutters, drag line operations or roadcutters, to dredge designated areas. Other alternatives to blasting, such as technology using pre-drilling and expansion gels to split rock, will also be considered. Construction methodology will attempt to minimize the possibility of inadvertent taking of any green sea turtles.

Footprint for Proposed Piers and Dolphins

The FEIS will provide the relative dimensions of proposed piers and dolphins as follows. Please refer to Figure 8 and Figure 9 of the DEIS for the location of these piers and dolphins.

Hilo Harbor

- Pier 2-3 Dolphins: six dolphins will be placed in line with existing Piers 3 at fifty-foot intervals, to total an extension of 312.5 feet from the end of Pier 3. Dolphins will be 25 by 30 foot concrete platforms supported by concrete piles. A pile-supported catwalk will join the dolphins and be designed for use by heavy equipment such as forklifts.

Mr. Paul Henson
May 31, 2001
Page Two

- Pier 4 will serve the proposed interisland terminal at Hilo Harbor. The pier will be of concrete platform on piles or bulkhead with sheet piling construction (or a combination of both). The length of Pier 4 is 1,000 feet.
- Piers 5 and 6 will be 1,000 feet in length. The width of the combined piers will be 200 feet.

Kawaihae Harbor

- Pier 1 The berth at this existing pier will require dredging from the current 35 feet to a depth of 40 feet.
- Pier 2a This existing pier will support the proposed overseas container terminal. The major seaward change will be dredging the berth from the existing 35 feet to 40 feet.
- Pier 2a Extension This pier extension will involve construction of a 450-foot, pile-supported pier and dredging of the berth to 40 feet.
- Pier 3 This will be a new 1,000 foot pier either of concrete platform on piles or bulkhead with sheet piling construction (or a combination of both).
- Pier 4 Proposed pier 4 will be 500 by 100 feet. The construction type will be concrete platform on piles.

Impacts to Coral Reef Resources

Hilo Harbor. The marine biological assessment performed at Hilo Harbor for the 2020 Master Plan concluded there are virtually no coral reef resources within the harbor that will be impacted. As described in the report, only three species of corals were sighted in the survey, *Pocillopora damicornis* and *Montipora capitata* in the vicinity of Pier 4, where coral growth was minimal and *Psammacora verrilli* in the vicinity of the Pier 5-6 alignment, where only a single colony was observed. Any impact of pier construction on the very scarce corals and reef organisms would be minimal.

Kawaihae Harbor. Kawaihae Harbor is no longer a coral reef area. The commercial harbor was formed when portions of a coral reef were destroyed and the harbor basin was dredged. Extant coral reef resources are restricted to the undredged edge of the inner harbor where no construction is planned. This area is shown in DEIS Figure 17, "Locations of Undredged Reef, Kawaihae Harbor." The marine biologist conducting the survey of Kawaihae Harbor concluded much

of the area where piers are proposed is presently rubble-sand bottom with little or no coral present. Because of the unusually low degree of turbidity in the harbor, certain corals have regenerated on vertical pier surfaces since the harbor was dredged. It is quite possible that the vertical, hard surfaces to be created by pier construction also will provide opportunity for additional coral growth. The "transition to fewer coral reef invertebrates and fish and overall reduced diversity" one might expect has not occurred so far. The relative abundance of harbor versus reef communities that will result from the harbor development is therefore only conjectural from the present available information, and mitigation for potential loss of coral reef resources is unrealistic.

Introduction of Alien Species

The Department of Transportation, Harbors Division shares your concern about the introduction of alien species. However, Harbors Division does not enjoy regulatory authority over such introductions (see Table 11 in the DEIS, entitled "Regulatory Oversight of Alien Species Control and Introduction in Hawaii"). Because Harbors Division has no regulatory authority, information on "details of cruise ship inspections" by other agencies will be limited to discussion and Table 11 in the DEIS.

With regard to alien species that might be resident in ballast water, Harbors Division obtained a recently-completed study by L.S. Godwin and L.G. Eldredge entitled South Oahu Marine Invasions Shipping Study (SOMISS), published by Bishop Museum in February 2001. Based on information in that publication, the FEIS will contain this additional discussion [words in the quote that are not bold or italicized indicate original language in the DEIS]: "A recent study of marine indigenous (introduced) species in Hawaii concluded the following: "Hawaii is a net importer of bulk cargo and manufactured goods, and therefore receives less ballast water than regions that are net exporters of these items" (Godwin and Eldredge, 2001). This is because ballast water is taken on in the loading rather than unloading phase of port operations. According to the Hilo Harbormaster, ships do not discharge ballast water in or near either of the subject harbors. This is consistent with the fact that the harbors' cargo operations are focused primarily in the offloading process."

Ranking of Vessels

As stated earlier, Harbors Division has no regulatory authority with regard to alien species introductions. Harbors Division will assist regulatory agencies with the ranking of incoming vessels according to their risk of introducing alien species. Harbors Division agrees with your proposed list of participating agencies, i.e., State of Hawaii, Division of Aquatic Resources, National Marine Fisheries Service, U.S. Department of Agriculture, and U.S. Fish & Wildlife Service.

Responses to comments in the section of your letter entitled "Specific Comments:"

DEIS, Page 2-22, 2.5.1 Interisland Terminal Facilities Paragraph 4, Sentence 1:
You noted "We do not understand the purpose of constructing berths to accommodate vessels up to 800 feet in length when you state that vessels of only 350 feet may use them." To clarify this point, the FEIS will state: "Although individual barges are generally 350 feet in length, they are often brought into the harbor in pairs with accompanying tugboats, thus requiring a longer pier. In addition, larger vessels such as liquid bulk tankers will need to be berthed at proposed Pier 4 to gain access to liquid bulk terminal facilities."

Page 2-25, 2.5.5 Construction of Piers and Dolphins - Hilo Harbor AND
Page 2-25, 2.5.5 Construction of Piers and Dolphins - Kawaihae Harbor
Please refer to the responses to your General Comments under "Footprint of Proposed Piers and Dolphins" and "Impacts to Coral Reef Resources" above.

Pg. 3-24, Table 9, Marine Biological Survey Summary - Hilo Harbor, September
2000 AND
Pg. 3-24, Table 10, Marine Biological Survey Summary - Kawaihae Harbor,
September 2000

You indicated these tables do not indicate which species are indigenous or endemic to Hawaii. You also recommend this information be added to make the marine biology consistent with the presentation of the terrestrial biology survey. The tables have been updated in the FEIS to differentiate between introduced, indigenous and endemic species. Tables 1 and 2 from DEIS Appendix B have been revised by marine biology consultant AECOS, Inc., to reflect introduced or cryptogenic (uncertain origin) organisms, those native to Hawaii which are indigenous (found elsewhere in the Pacific) and endemic (found only in the Hawaiian Islands). The revised tables will be included in the FEIS as a revision to Appendix B.

[EDITOR'S NOTE: "Table 9" in this letter is found in Appendix E as Table 5. Table 2 in this letter is found as Table 10 in Appendix E. Table 1 attached to this letter is the same as Table 5 in Appendix E; Table 2 attached to this letter is the same as Table 9 in Appendix E.]

Mr. Paul Henson
May 31, 2001
Page Five

Pg. 3-27, Kawaihae Harbor, Paragraph 1, Sentence 4

Your comments deal with deterioration vs. regeneration of coral resources within Kawaihae Harbor. Please see the response to your General Comments under "Impacts to Coral Reef Resources."

Pg. 3-35, Hull Growth, Paragraph 3, Sentence 2:

Your comment concerns the length of time in which hull-growth can occur. In the FEIS we will modify the sentence as follows: "Alien species may need little time to transfer from host vessels to other vessels and spread to other harbors. However, the amount of time needed for transfer of organisms is a point of conjecture, even among the experts on this subject."

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Charles T. Koga

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division

Attachment

Table 1. Organisms recorded on survey of Kawaihae Harbor,
September 16-17, 2000

Taxa 1	Taxa 2	Genus Species	Author, Date	Pier 1	Pier 2a	Pier 2b	Pier 3-5	Jetty
Rhodophyta	Coralinaceae	<i>Hydrothrix reinboldii</i>	(Webb, van Borsse & Foster) Foster (Heyenrich) Foster					x
Porifera	Callyspongiidae	<i>Porolithon onkodes</i>	(Rudley, 1884)		x			x
	Microcionidae	<i>Callyspongia diffusa</i>					x	
	Dysideidae	<i>Clathria sp.</i>	Schmidt, 1882		x			
	Myxillidae	<i>Dysidea cf. avara</i>	(de Laubenfels, 1950)		x			
	Spirastrellidae	<i>Hydrocha prolea</i>	Ridley, 1884		x			
	Penninidae	<i>Spirastrella vagabunda</i>						
Hydrozoa	Penninidae	<i>Pennaria disticha</i>	Gottlieb, 1820		x			x
Anthozoa	Pocilloporidae	<i>Pocillopora meandrina</i>	Dana, 1852		x			x
	Pocilloporidae	<i>Pocillopora eydouxii</i>	Mawe-Edwards & Harmer, 1960		x			x
	Pocilloporidae	<i>Pocillopora damicornis</i>	(Linnaeus, 1758)		x			x
	Acroporidae	<i>Montipora capitata</i>	(Dana, 1846)		x			x
	Poritidae	<i>Montipora patula</i>	Verrill, 1864		x			x
		<i>Porites compressa</i>	Dana, 1846		x			x
		<i>Porites lobata</i>	Dana, 1846		x			x
		<i>Porites evermanni</i>	Vaughan, 1907		x			x
	Agariciidae	<i>Parona varians</i>	Verrill, 1864		x			x
	Fungiidae	<i>Fungia scutaria</i>	Lamarck, 1801		x			x
	Favidae	<i>Cyphastrea ocellina</i>	(Dana, 1846)		x			x
		<i>Lepidastrea purpurina</i>	Dana, 1846		x			x
	Antipathidae	<i>Carrispathes arguina</i>	Dana, 1846		x			x
Polychaeta	Amphinomidae	<i>Eurythoe complanata</i>	(Pallas, 1766)			x		
	Chaetopteridae	<i>Chaetopterus sp.</i>	(Claparede, 1870)		x			
		<i>Mesochaetopterus cf. sagittatus</i>						
	Terebellidae	<i>Loimia medusa</i>	(Savigny, 1818)		x			x
	Sabeliidae	<i>Sabelia sturte</i>	(Grube, 1878)		x			x
	Serpulidae	<i>Spectabilis</i>	(Huxley, 1855)					
		<i>Spirobranchius giganteus</i>	(Pallas, 1776)		x			
Crustacea	Cirripedia	<i>Balanus reticulatus</i>	Unomi, 1960		x			
		<i>Chthamalus proteus</i>	Dando & Southward, 1960		x			x
	Stenopodidae	<i>Stenopus hispidus</i>	Rathbun, 1907		x			x
	Grapsidae	<i>Grapsus tenuicrustatus</i>	(Herbst, 1763)		x			
Gastropoda	Neritidae	<i>Nerita picea</i>	(Reich, 1841)					
	Cassidae	<i>Charonia tritonis</i>	(Linn., 1758)					
	Littorinidae	<i>Littoraria pinnata</i>	(Wood, 1828)					
	Vermetidae	<i>Eulalia tulipa</i>	(Chene, 1843)					
	Cypraea	<i>Cypraea caputserpentis</i>	Linnaeus					
		<i>Cypraea chinensis</i>	Gmelin, 1791					
	Hippuritidae	<i>Hippurix sp.</i>						
Ophiobranchia	Chromodorididae	<i>Hypselodoris infurcata</i>	(Ruppell & Leuckart, 1828)					x

Table 1 (continued).

Taxa 1	Taxa 2	Genus Species	Author, Date	Pier 1	Pier 2a	Pier 2b	Pier 3-5	Jetty
Bivalvia	Ostreidae	<i>Crassostrea gigas</i>	(Linnaeus, 1758)	x	x			
	Spondyliidae	<i>Dendostrea zelandicaensis</i>	Sowerby, 1871			x		
Cephalopoda	Octopodiidae	<i>Spondylus violaceus</i>	Lamarck, 1819		x			
		<i>Octopus cyaneus</i>	Gray, 1840					
Ectoprocta	Vesiculianidae	<i>Amathia cistans</i>	Buch, 1888		x			
	Diaperoeciidae	<i>Diaperoecia intricata</i>					x	
Echinoidea	Diademidae	<i>Diadema pericarpinum</i>	Apostol, 1863			x		
		<i>Echinolirix diadema</i>	Linnaeus, 1758		x			
		<i>Echinolirix callimaris</i>	(Pallas, 1774)		x			
	Toxopneustidae	<i>Trapanus graziella</i>	(Linnaeus, 1758)		x			
	Echinometridae	<i>Echinometra mathaei</i>	(Blanford, 1825)		x			
		<i>Echinostrophus oculatus</i>	A. Agassiz, 1863			x		
		<i>Heterocentrotus mammillatus</i>	Linnaeus, 1758		x			
		<i>Actinopygia mauritiana</i>	(Quoy & Gaimard, 1824)		x			
Urochordata	(Ascidacea)	<i>Didemnum</i> sp.			x			
		<i>Herdmania momus</i>	(Savigny, 1816)	31	28	13	25	19
		Total Invertebrate Taxa						
Osteichthyes	Synodontidae	<i>Saurida flamma</i>	Waters, 1962		x			
	Belontiidae	<i>Polybona argalus</i>	(Bennett, 1832)		x			
	Holocentridae	<i>Sargocentron</i> sp.				x		
	Aulostomidae	<i>Aulostomus chinensis</i>	(Linnaeus, 1766)			x		
	Fistulariidae	<i>Fistularia commersonii</i>	Ruppell, 1838				x	
	Cirriiidae	<i>Paracirrhites forsteri</i>	(Bloch & Schneider, 1801)		x			
		<i>Paracirrhites arcatus</i>	(Cuvier, 1829)		x			
	Kuhliidae	<i>Kuhlia sandvicensis</i>	(Staudacher, 1876)		x			
	Carangidae	<i>Caranx melampygus</i>	Cuvier and Gaimard, 1824		x			
		<i>Caranx sexfasciatus</i>	(Quoy and Gaimard, 1824)		x			
	Lutjanidae	<i>Lutjanus fulvus</i>	(Quoy and Gaimard, 1824)		x			
		<i>Lutjanus kasmira</i>	(Forsk., 1775)			x		
	Mulidae	<i>Mulichthys flavovirens</i>	(Lacépède, 1801)		x			
		<i>Mulichthys varicostata</i>	(Valenciennes, 1831)		x			
		<i>Parupeneus multifasciatus</i>	(Quoy & Gaimard, 1824)		x			
		<i>Parupeneus porphyreus</i>	Jenkins, 1903			x		
	Kyphosidae	<i>Kyphosus bigibbus</i>	Lacépède, 1802			x		
		<i>Chaetodon quadrimaculatus</i>	Gray, 1833		x			
		<i>Chaetodon auriga</i>	Forsk., 1775		x			
		<i>Chaetodon frembii</i>	Bennett, 1829		x			
		<i>Chaetodon lunula</i>	(Lacépède, 1803)		x			
		<i>Chaetodon millaris</i>	(Quoy & Gaimard, 1828)		x			
		<i>C. ornaticornis</i>	Cuvier, 1831			x		
		<i>C. quadrimaculatus</i>	Gray, 1833		x			
		<i>Chaetodon relictus</i>	Cuvier, 1831			x		

Table 1 (continued).

Taxa 1	Taxa 2	Genus Species	Author, Date	Pier 1	Pier 2a	Pier 2b	Pier 3-5	Jetty
	Chaetodontidae	<i>Forcipiger flavissimus</i>	(Quoy & Gaimard, 1824)	x				
		<i>Abudefduf vaigensis</i>	(Quoy & Gaimard, 1824)		x			
		<i>Abudefduf abdominalis</i>	(Swinhoe, 1873)		x			
	Pomacentridae	<i>Chromis hanui</i>	Valant and Saurage, 1875			x		
		<i>Dascyllus abissella</i>	(Ogilby, 1899)		x			
		<i>Plectrograptidodon johnstonianus</i>	Bloch & Schneider, 1901			x		
	Serranidae	<i>Stegastes fasciatus</i>	(Valenciennes, 1839)			x		
		<i>Bodianus bimaculatus</i>	Lacépède, 1801			x		
		<i>Gomphosus varius</i>	Randall 1960			x		
	Labridae	<i>Labridae phitrophagus</i>	(Quoy and Gaimard, 1824)		x			
		<i>Thalassoma olivaceum</i>	(Quoy and Gaimard, 1824)		x			
		<i>Scarus</i> sp. (juv.)	(Forsk., 1775)		x			
	Scaridae	<i>Acanthurus nigrofasciatus</i>	(Linnaeus, 1758)		x			
	Acanthuridae	<i>Acanthurus nigrosteus</i>	(Valenciennes, 1835)		x			
		<i>Acanthurus nigrosteus</i>	(Valenciennes, 1835)		x			
		<i>Acanthurus blochii</i>	Shaw, 1803		x			
		<i>Acanthurus achilles</i>	(Bloch & Schneider, 1801)		x			
		<i>Acanthurus olivaceus</i>	(Cuvier & Valenciennes, 1835)		x			
		<i>Acanthurus dussumieri</i>	(Jenkins, 1903)			x		
		<i>A. leucopareus</i>	(Bennett, 1828)			x		
		<i>Ctenochaetus singus</i>	(Bloch & Schneider, 1801)			x		
		<i>Naso lateralis</i>	(Valenciennes, 1835)			x		
		<i>Naso brevirostris</i>	(Bennett, 1828)			x		
		<i>Zabrasoma flavescens</i>	(Linnaeus, 1758)			x		
	Zanclidae	<i>Zanclus cornutus</i>	(Linnaeus, 1758)			x		
	Ostracionidae	<i>Ostracion meleagris</i>	(Linnaeus, 1758)			x		
		<i>Arothron hispidus</i>	(Jenkins, 1901)			x		
	Tetraodontidae	<i>Canthigaster jactator</i>	(Linnaeus, 1758)			x		
		<i>Diodon holocanthus</i>	(Schneider, 1844)			x		
		<i>Melichthys vidua</i>	(Bloch, 1786)			x		
		<i>Rhinecanthus aculeatus</i>	(Linnaeus, 1758)			x		
		<i>Rhinecanthus aculeatus</i>	(Bloch & Schneider, 1801)			x		
		<i>Sufflamen bursa</i>	(Linnaeus, 1758)			x		
		Total Fish Taxa		29	14	20	34	35
Reptilia	Chelonidae	<i>Chelonia mydas</i>			x			
		Total Taxa		60	41	33	58	55

† - Species thought to be introduced (seen in Hawaiian Islands); All others are considered to be native species, with those in bold representing the endemics (found only in the Hawaiian Islands).

Table 2. (continued).

Taxa 1	Taxa 2	Genus Species	Author, Date	Radio Bay	Pier 4	Pier 5-6	Pier 2-3
	Osteichthyes	Muraenidae					
		<i>Gymnothorax flavimarginatus</i>	(Ruppell, 1830)	x			
	Atherinidae	<i>Pranessius insularum</i>	Jordan and Everman, 1903		x		
	Cerangidae	<i>Caranx</i> sp.					
		<i>Caranx melampygus</i>	Cuvier and Valenciennes, 1833				
	Lutjanidae	<i>Lutjanus fulvus</i>	(Quoy & Gaimard, 1824)		x		
		<i>Lutjanus kasmira</i>	(Forsk., 1775)				
	Mulidae	<i>Muldoichthys vaucorum</i>	(Valenciennes, 1831)		x		
		<i>Parupeneus porphyreus</i>	Quoy & Gaimard, 1824		x		
		<i>Parupeneus porphyreus</i>	Jenkins, 1903		x		
		<i>Chaetodon eurys</i>	Forsk., 1775		x		
		<i>Chaetodon fremblii</i>	Bennett, 1829				
		<i>Chaetodon lunula</i>	(Lacepede, 1803)				
		<i>Chaetodon milleris</i>	Quoy & Gaimard, 1828				
		<i>Hemichromis diphreutes</i>	Jordan, 1904		x		
		<i>Abudefduf axdominalis</i>	(Quoy & Gaimard, 1824)				
		<i>Dascyllus abisefia</i>	Gill, 1863		x		
		<i>Stegastes fasciatus</i>	(Ogby, 1887)		x		
		<i>Scarus</i> sp. (rev.)					
		<i>Balypogobius fuscus</i>	(Ruppell, 1828)		x		
		<i>Acanthurus triostegus</i>	(Linnaeus, 1758)		x		
		<i>Acanthurus blochii</i>	Valenciennes, 1835		x		
		<i>Acanthurus oosumieri</i>	Cuvier & Valenciennes, 1835				
		<i>Zanclus cornutus</i>	(Linnaeus, 1758)		x		
		<i>Arothron hispidus</i>	(Linnaeus, 1758)		x		
		Total Fish Taxa		10	10	6	9
	Reptilia	<i>Chelonia mydas</i>					
		Total Taxa		26	32	18	15

† - Species thought to be introduced (alien to Hawaiian Islands); All others are considered to be native species, with those in bold representing the endemics (found only in the Hawaiian Islands).

Table 2. Organisms recorded on survey of Iliio Harbor, September 23, 2000

Taxa 1	Taxa 2	Genus Species	Author, Date	Radio Bay	Pier 4	Pier 5-6	Pier 2-3
Chlorophyta	Caulerpaceae	<i>Caulerpa racemosa</i>	(Forst.) J. Agardh		x		
		<i>Cladophora fascicularis</i>	(Mertens) Kützling			x	
		<i>Cladophora peltata</i>	Sakai		x		
Phaeophyta	Sargassaceae	<i>Lobophora variegata</i>	(Lamour.) Wernsky				
		<i>Sargassum</i> sp.					
Rhodophyta	Rhodomelaceae	<i>Amansia glomerata</i>	C. Agardh				
		<i>Porolithon onkodes</i>	(Hayward) Fensholt				
		<i>Mariensia fragilis</i>	Harvey				
		<i>Spyridia filamentosa</i>	(Wulfen) Harvey				
		Total Algae Taxa		1	7	3	0
Porifera	Callyspongiidae	<i>Callyspongia cf. diffusa</i>	(Ridley, 1884)				
	Microcionidae	<i>Clathria</i> sp.					
	Dysideidae	<i>Dysidea cf. avara</i>	Schmidt, 1982				
	Desmacellidae	<i>Blechna fistulosa</i>	(Topsent, 1937)				
	Myxillidae	<i>Heterochela protea</i>	(de Laubenfels, 1950)				
		Green sponge					
		Pink sponge					
		Red sponge					
Hydrozoa	Pennariidae	<i>Pennaria disticha</i>	Godwin, 1820				
	Aglaopheniidae	<i>Gymnangium hians</i>	(Buck, 1832)				
	Octocorallidae	<i>Arbacia bicolor</i>	(Nutting, 1908)				
	Telestidae	<i>Caripoa rissel</i>	Duchassaing & Michaud, 1860				
	Pocilloporidae	<i>Pocillopora damicornis</i>	(Linnaeus, 1758)				
	Acroporidae	<i>Montipora capitata</i>	(Dana, 1846)				
	Siderastreaeidae	<i>Psammospora verrilli</i>	Vauphan, 1907				
Polychaeta	Chaetopteridae	<i>Chaetopterus</i> sp.					
	Sabellidae	<i>Subellastaria spectabilis</i>	(Grube, 1878)				
	Sirrobidae						
Crustacea	Cirripedia	<i>Balanus reticulatus</i>	Urnorn, 1960				
		<i>Balanus eburneus</i>	Gould, 1841				
		<i>Chthamalus proleus</i>	Dando & Southward, 1960				
	Panuliridae	<i>Panulirus penicillatus</i>	(Olivier, 1791)				
	Grapsidae	<i>Grapsus tenuicrustatus</i>	(Herbst, 1783)				
Gastropoda	Vermelidae	<i>Eulalia fulva</i>	(Chenu, 1843)				
	Siphonariidae	<i>Siphonaria normalis</i>	Gould, 1846				
	Ischnochitonidae	<i>Ischnochiton petaloides</i>	(Gould, 1846)				
	Mytilidae	<i>Brachidontes crebristriatus</i>	Conrad				
Bivalvia	Ostreidae	<i>Crassostrea gigas</i>	(Thunberg, 1793)				
Ectoprocta	Schizoporellidae	<i>Schizoporella</i> sp.					
	Total Invertebrate Taxa			15	15	9	6

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
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The Honorable Brian K. Minaai
April 23, 2001
Page 2

April 23, 2001

To: The Honorable Brian K. Minaai, Director
Department of Transportation

Attn: Glenn Soma, Harbors Division (Fax 587-2504)

From: Raynard C. Soon, Chairman
Hawaiian Homes Commission *Raynard C. Soon*

Subject: Hawaii Commercial Harbors 2020 Master Plan, Draft
Environmental Impact Statement, Island of Hawaii

Thank you for allowing our review of the subject report for development of the two deep-draft harbors at Hilo and Kawaihae. We offer the following comments:

More than 90% of all goods and supplies entering and leaving the Big Island go through these commercial harbors. These economic gateways are vital to the survival of the county, and optimizing their use and development is a key factor to future prosperity.

The Department of Hawaiian Home Lands (DHHL) administers Hawaiian home lands tracts in close proximity to both Hilo Harbor (1,670 acres at Keaukaha) and Kawaihae Harbor (10,153 acres at Kawaihae-1). We anticipate positive impacts from opportunities that can be provided for our homesteaders and economic revenue-producing uses of our lands from development and operations at the harbors.

The State of Hawaii relies on the Department of Transportation (DOT) to develop harbor facilities that accommodate the needs of the maritime industry in ways that maximize the benefits to the local and state economies. Comprehensive and accurate forecasts of cargo and passengers should be the bases for planning.

Cruise ship passengers are "real tourists" who will be out to see the sights and spend money. The economic benefits to local enterprises could be similar to that described in the article from Hawaii Business magazine of February 2001 entitled "Their Ships Have Come in; Kauai Merchants are Reaping Benefits of a Growing Cruise Industry." Assessments should be made of the losses that will be suffered if the harbors are unable to handle cargo and cruise ship demands. Overgrowth, on the other hand, could cause many adverse impacts if infrastructure and facilities are not provided to handle the increased traffic effectively and efficiently.

For example, a ship passenger terminal could include space for local commercial and cultural concessions. Adequate restrooms and other comfort facilities should be provided. The layout should provide for safe and easy vehicular access and loading so that visitors can go into the nearby areas or go on tours. Proposals from other agencies and the private sector should be sought.

The harbor cargo projections are general and do not specify that segment attributed to forest industry products. Please include more detailed projections in the final report.

If you have any questions regarding our comments, please call Darrell Yagodich of our Planning Office at 586-3836.

c: OEQC (Fax 586-4186)
RHTC (Fax 842-1937)

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Mr. Raynard Soon
May 15, 2001
Page Two

Table 2, "Dry Bulk Storage" to "Dry Bulk Storage (Timber Products, Cement and Scrap Metal)."

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division

May 15, 2001

Mr. Raynard C. Soon, Chairman
Hawaiian Home Lands Commission
State of Hawaii
Department of Hawaiian Home Lands
Post Office Box 1879
Honolulu, Hawaii 96805

Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement

Dear Mr. Soon:

This is in response to your memorandum to the Department of Transportation dated April 23, 2001, which provided comments on the above-referenced Draft Environmental Impact Statement.

The Department of Transportation, Harbors Division (hereafter Harbors Division) appreciates your acknowledgement of the vital nature of harbors and the need to optimize their use and development to future prosperity. Harbors Division is aware that harbor improvements have the potential for positive impacts to neighboring homeowners as well as the potential for revenue-producing uses of Hawaiian Home Lands from development and operations at the harbors.

Harbors Division agrees with the need for comprehensive and accurate forecasts of cargo. Harbors Division is confident in the methodology used to create projections, as described on page 2-12 of the DEIS. With regard to comprehensive projections of passengers, Harbors Division will continue to monitor projections for cruise ship arrivals developed by the State of Hawaii, Department of Business, Economic Development and Tourism, as discussed on page 2-14 of the DEIS. In addition, projections will also carefully consider trends in actual cruise ship bookings at Ilio Harbor and Kawaihae Harbor such as those described on page 2-15 of the DEIS.

With regard to the allocation of space for forest industry products, this is shown in the DEIS in Table 2 as "Dry Bulk Storage." Estimates of harbor space needed to store forest products at the subject harbors were determined through consultation with representatives of the island of Hawaii forest products industry. To clarify this, the FEIS will revise the





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

REPLY TO
ATTENTION OF

April 23, 2001

Regulatory Branch

Mr. Glenn Soma
Harbors Division
Department of Transportation
State of Hawaii
79 S. Nimitz Highway
Honolulu, Hawaii 96813

Dear Mr. Soma:

Thank you for providing a review copy of the Draft Environmental Impact Statement (DEIS) for the Hawaii Commercial Harbors 2020 Master Plan, Island of Hawaii, Hawaii. The proposed action involves Harbors Division implementation of various improvements at Hilo Harbor and Kawaihae Harbor. We have reviewed the DEIS with respect to the Corps' authority to issue Department of the Army (DA) permits under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403), Section 404 of the Clean Water Act (33 USC 1344), and Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 USC 1413).

Based on the information provided in the DEIS, I have tentatively determined that the proposed improvements at Hilo Harbor and Kawaihae Harbor will require a DA permit. Final determinations of permit requirements can be made when specific plans for the various improvements are developed.

Please note that the Corps of Engineers does not have any separate "Approval of Drainage Outfall" authority as suggested by statements on pages 5-1 and 6-1 of the DEIS, although construction of a drainage outfall or other structure in waters of the U.S. may require authorization by a DA permit issued pursuant to one or more of the above-cited Acts.

Should you have questions regarding these comments, please contact Mr. Peter Galloway of my staff at 438-8416 (FAX 438-4060). Mailed correspondence concerning the proposed action should be addressed to: Regulatory Branch

WEB	KTS	
R-E	NA	
ATT	BRT	
REC'D APR 25 2001 MIT		
GMS		

-2-

(CEPOH-EC-R/P. Galloway); U.S. Army Engineer District, Honolulu; Building 230; Fort Shafter, Hawaii 96858-5440. File number 200100161 has been assigned to this project.

Sincerely,


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

Copy Furnished:

- Ms. Genevieve Salmonson, Office of Environmental Quality Control, 235 S. Beretania Street, Suite 702, Honolulu, HI 96813
- Mr. Chester T. Koga or Ms. Gail W. Atwater, R.M. Towill Corp., 420 Waiakamilo Road, Suite 411, Honolulu, HI 96817

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Mr. George Young
May 15, 2001
Page Two

If you have any further questions please do not hesitate to call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division

May 15, 2001

Mr. George P. Young, P.E.
Chief, Regulatory Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858-5440

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Mr. Young:

Thank you for your letter dated April 23, 2001 to Mr. Glenn Soma of the Department of Transportation, Harbors Division in which you provided comments on the above-referenced Draft Environmental Impact Statement (DEIS).

The Department of Transportation, Harbors Division acknowledges the requirement for Department of the Army permits for improvements at Hilo Harbor and Kawaihae Harbor proposed under the Hawaii Commercial Harbors 2020 Master Plan.

With regard to statements on pages 5-1 and 6-1 of the DEIS concerning a separate "Approval of Drainage Outfall," in the FEIS we have modified page 5-1 to strike the sentence "Other planned improvements could require an Approval of Drainage Outfall by ACOE." The table on page 6-1 also has been modified according to your comments. Per consultation with your staff, approval of a drainage outfall, as well as action under the Rivers and Harbors Act, would fall under the umbrella of a Department of the Army permit and therefore do not have to be listed as separate approvals.





University of Hawaii at Mānoa

Environmental Center
A Unit of Water Resources Research Center
Krauss Annex 19 - 2500 Dole Street - Honolulu, Hawaii 96822
Telephone: (808) 956-7361 - Facsimile: (808) 956-3980

April 23, 2001
RE: 0714

Mr. Glenn Soma
State Department of Transportation
Harbors Division
79 South Nimitz Highway
Honolulu, Hawaii 96813

Dear Mr. Soma:

Hawaii's Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement
South Hilo, South Kohala, Hawaii

The State of Hawaii, Department of Transportation, Harbors Division, proposes to implement harbor improvements at Hilo Harbor and Kawaihae Harbor. Some of the proposed improvements at Hilo Harbor include the construction of new piers, dredging alongside piers, new sheds, access roads, utilities, a new passenger terminal, and a new ocean research facility. The timing of these various improvements ranges from the years 2002 to 2015. Similar improvements are proposed for the Kawaihae Harbor. The purpose of the Harbors Master Plan 2020 is to accommodate the increases of shipping and cargo traffic proposed for the harbors, as well as to meet the demand for Hawaii's expanding cruise ship industry. The cost for this project has a range of \$150-300 million.

This review was conducted with the assistance of Ed Laws, Oceanography; Hans Van Tilburg, Maritime Archaeology; and Renee Thompson, Environmental Center.

General Comments

The Hawaii Commercial Harbors 2020 Master Plan seems justifiable given the projected harbor traffic increases. We would like to take this opportunity to make a few suggestions and point out a few deficiencies.

Mr. Soma
Page 2
April 23, 2001

Dredging and Blasting

Dredging and possibly blasting will be required to make the depth of the harbor a uniform 35 feet. On page 2-26 of the EIS it is stated that dredge spoil will be dumped at the EPA approved ocean dump for Hilo Harbor. How much material will be dredged from Hilo Harbor? How much material will be dredged from Kawaihae Harbor? How much material can be stored at the existing dredge material holding area for Kawaihae Harbor?

If blasting is necessary at Kawaihae Harbor how much will take place? When will it take place? On page 3-6 of the EIS the impacts of construction activities on the fill soils in the project areas are discussed. Does this discussion include the potential impacts from blasting which may occur at Kawaihae Harbor?

Affected Environment-Proposed Mitigation Measures

On page 3-8 we are told that "The NPDES Permitting process will require the submission of a Best Management Practices Plan which will address methods of runoff, erosion, and sediment control at the project sites". What are best management practices (BMPs) with respect to runoff, erosion, and sediment control? The key is to get as much of the runoff as possible to percolate into the ground rather than going straight down the storm drain and into the harbor.

Related to the runoff issue is the proposed expansion of the roadways that provide access to the harbor. Runoff from roadways can be a significant cause of water pollution, particularly if the parties responsible for maintenance of the roadway insist on applying Roundup to all vegetation within several feet of the side of the road. The result is barren soil that washes away with every rain. There is no mention of this problem in the EIS.

Overseas Container Terminal

The discussion of the overseas container terminal (pages 3-21 to 3-23) mentions "The forest here is from 50 to 80 feet tall". We infer that trees 50 to 80 feet tall are going to be cut down to make way for the container terminal. Assuming this to be the case, the statement (p. 3-23) "No adverse impact is expected" is a bit off target. If these trees will be cut down, we suggest that native trees be planted in the vicinity as mitigation to replace those that will be cut down.

Existing Conditions

In Table 9 (p. 3-24) the number of species adds up to 51, not 76. The arithmetic is correct in Table 10 (p. 3-27). On page 3-24 mention is made of "76 organisms". Are we talking about 76 organisms or 76 species?

Solid Waste

The status of the Hilo landfill is troublesome (p. 3-41). The landfill is unlined and out of compliance with EPA regulations. On page 3-41 we are told that the County of Hawaii has applied for annual extensions for the landfill to remain open. On page 3-42 we are told that closure of the landfill "appears imminent". The draft EIS envisions the solid waste being hauled 90 miles by truck to the West Hawaii Landfill (p. 3-42). The EIS should make it clear that putting the solid waste in the Hilo landfill is unacceptable and that the waste must go to the West Hawaii landfill until an EPA approved landfill becomes available closer to Hilo.

We commend the Harbors Division for the environmentally responsible plans on page 3-44 which mention that the "Division will actively encourage recycling efforts by interisland cruise ships". We would like to know how will this plan be carried out? Will the Harbors Division draft rules requiring recycling on-board vessels or will this recycling effort be voluntary?

Fire Protection

On page 3-47, we are told that there is no fire hydrant within the Hilo harbor property and that the spacing of fire hydrants is inadequate at Kawaihae. On page 3-48 we are told that "All of the existing utilities and public services are expected to be sufficient". It seems to us that if there is no fire hydrant within the Hilo harbor property and the spacing of fire hydrants is inadequate at Kawaihae, the conclusion that all of the existing utilities and public services will be sufficient is in accurate. On page 3-49, we are told that the Harbors Division will "evaluate the requirement for fire hydrants to be closer together than currently provided and take appropriate action". What is there to evaluate? If the fire hydrants are too far apart, then more fire hydrants are needed. More fire hydrants during construction and building expansion of the harbor facilities seems appropriate.

Water Quality

On page 3-63, a background water quality analysis of each harbor is recommended. "Throughout the construction period, daily monitoring should continue to measure any degradation". Water quality is not constant from day to day. The background water quality study should include data collected under a variety of conditions.

At Kawaihae data should be collected on both calm and windy days. At Hilo Harbor data should be collected during both fair weather and rainy weather. Without having some sense of the range of water quality in the harbors under present conditions, it will be difficult to judge whether the construction activities are having any impact.

The water quality data reported in Appendix E are from 9/17/99, 9/29/99, and 3/26/91 in the case of Kawaihae Harbor and 9/24/00 in the case of Hilo Harbor. Some data for Hilo Harbor are also reported from studies reported in 1977 and 1980. It is unclear what measures of water quality will be made on a daily basis during construction. We suggest that the same measurements be made over a period of time on a daily basis prior to construction. In other words, do not compare measurements made on a daily basis during construction with measurements made only a few times prior to construction.

Submerged Cultural Resources

Regarding section 4-3 of the EIS, it would appear that the planners are relying on past terrestrial archaeological surveys and an evaluation of records on file with the State's Preservation Division. Neither meet the legal requirements for submerged cultural resources survey. A dive by a biologist does not constitute appropriate survey methods for submerged cultural resources

Shipwrecks noted as being lost in Hilo bay:

Pato	1881
schooner	1871
Katy Lee	1869
schooner	1900
Maia	1949
steamship	1916
Kilanea Hoi	1887
Lanakila	1912
Sampan	1905
Kold Manu	
Selina	
Kikikitai	
Martha Davis	

Shipwrecks noted as being lost near Kawaihae:

Liliu	1880
schooner	

A couple of these wrecks have been located, the rest have not. Almost all of them are historic submerged cultural resources, property of the state of Hawaii, and eligible for nomination to the National Register for Historic Places. They are the physical remains of Hawaii's maritime history. Their management falls under the federal guidelines of the 1987 Abandoned Shipwreck Act. The State's Historic Preservation Division should be well aware of this act, as it dictates the proper protective measures necessary for the intelligent assessment of the State's own submerged cultural resources.

According to the National Historic Preservation Act as amended in 1992, section 106, any project using federal assistance must take into account the possibility of inclusion of objects eligible for the National Register. For submerged cultural resources, this means appropriate survey measures must be undertaken whether or not there is indication of significant remains. A survey is done to determine extent remains, not in response to remains.



Mr. Soma
Page 5
April 23, 2001

Hawaii is may not be in compliance with federal law when it comes to submerged cultural resources. Going through IHPD files does not serve as appropriate survey for submerged cultural resources. Having a biologist report a pile of rocks page (4-11) and an archaeologist dive on them does not constitute an accurate survey of underwater areas.

The industry standard for section 106 surveys involves using both magnetometer remote sensing equipment to detect magnetic anomalies and side scan sonar for detecting artificial protrusions above the seafloor. These tools are readily available to many companies, as are archaeologists trained in conducting surveys for submerged cultural resources. For these relatively small project areas, should be easy.

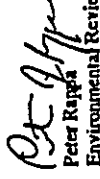
The project as planned, without appropriate survey, might have a negative impact on significant submerged cultural resources.

Conclusion

The Hawaii Commercial Harbors 2020 Master Plan is shown to be necessary plan to responsibly manage and accommodate the increased boat traffic in the area. We would like to encourage the planners to seriously consider a complete maritime archaeological survey of the area, as well as conduct up to date water quality analysis. Solid waste is an issue that should be examined more closely. It is important that the planners are prepared to responsibly handle the increased waste coming into the harbors in an environmentally sound manner.

We thank you for the opportunity to review this Draft Environmental Impact Statement.

Sincerely,


Peter Rapp
Environmental Review Coordinator

cc: OEQC
James Moncur, WRRRC
Chester Koga, R.M. Towill
Rence Thompson

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May 31, 2001

Mr. Peter Rappa
Environmental Review Coordinator
University of Hawaii Environmental Center
2500 Dole Street, Krauss Annex 19
Honolulu, Hawaii 96822

Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement

Dear Mr. Rappa:

Thank you for your letter of April 23, 2001 which was received by the Department of Transportation, Harbors Division in which you provided comments on the above-referenced Draft Environmental Impact Statement (DEIS).

Our responses follow the headings presented in your letter.

Dredging and Blasting

Dredging. For each harbor, the area to be dredged by Harbors Division will extend to the current Federal Project Line (existing dredging limits). For Hilo Harbor, preliminary calculations of the volume of dredged material indicate a range of 600,000 to 700,000 cubic yards to dredge the area from Pier 3 to the berth area of Pier 6 and to the existing Federal Project Line. For Kawaihae Harbor, the estimated volume of dredged material would be between 60,000 and 70,000 cubic yards to dredge an additional 5 feet from 35 to 40 feet along Piers 1, 2a and 2b and to 40 feet along the coral stockpile shoreline to the existing Federal Project Line. At Kawaihae the dredged material will be stored on-site at the commercial harbor in the area designated "Cargo Expansion Area." The dredging spoils from previous harbor dredging are in demand by agricultural interests for use in high-calcium soils and for use as a cover fill in sanitary landfills.

Blasting. With regard to concerns about underwater blasting, Harbors Division will explore the feasibility of using other technologies as an alternative to blasting, such as the use of cutterheads, drag line operations or roadcutters, to dredge designated areas. Other alternatives to blasting, such as technology using pre-drilling and expansion gels to split rock, will also be considered.

Mr. Peter Rappa
May 31, 2001
Page Two

Affected Environment - Proposed Mitigation Measures

Your comment refers to Best Management Practices. Harbors Division will comply with guidelines set forth in Section 9 of Hawaii Administrative Rules, Chapter 11-55, Appendix C, which lists construction management techniques, vegetation controls and structural controls.

Overseas Container Terminal

Your comment pertains to non-native trees "50 to 80 feet tall." You are correct that existing non-native trees will be cut down for construction of the overseas container terminal. The trees are part of an area with introduced plants.

Existing Conditions

With regard to your question about species versus organisms, in the FEIS the text in Appendix E, Review of Water Quality and Biology in Kawaihae and Hilo Harbors for the Harbors 2020 Master Plan Implementation EIS, by AECOS, Inc., will be revised as follows: "A total of only 63 species were recorded on the surveys (Table 2) composed of 9 macroalgae, 29 invertebrates, 24 species of fish, and the green sea turtle." In addition, Tables 9 and 10 will be annotated in Appendix E of the FEIS.

Solid Waste

In response to your comments about solid waste, the DEIS states that the Hilo landfill is unacceptable and waste must go to the West Hawaii landfill. On page 3-42 the DEIS states, "The most likely scenario for handling Hilo's solid waste is to use a central processing station, in which solid waste is sorted then transferred by truck to the West Hawaii landfill."

With regard to recycling by cruise ships, Harbors Division envisions an informal voluntary program which could eventually become more structured with formal rules in cooperation with the State Department of Health which is responsible for regulating solid waste disposal. According to the Hilo Harbormaster, domestic cruise ships are already recycling solid waste by separating cardboard, glass and cans. Harbors Division will continue to encourage such efforts on an informal basis.

Fire Protection

With regard to your concern about fire hydrants at the two harbors, the FEIS will contain the statement: "Harbors Division will ensure that adequate hydrants are provided for the safety of existing and proposed development."

Water Quality

With regard to your comments about water quality monitoring, AECOS, Inc., the firm responsible for water quality information in the FEIS, has offered the following information: "Water quality monitoring is anticipated to be included as a requirement in the permits/certifications obtained for construction in the marine environment as required under the Clean Water Act. Monitoring requirements, overseen by the State of Hawaii, Department of Health (HDOH), would include preconstruction monitoring, and you are correct that such monitoring should extend over a period of time that yields meaningful results rather than compressed into a week before construction starts."

The actual parameters to be measured by the monitoring process are stated in the water quality regulations and guidance documents of the HDOH. Additional parameters could be included if special circumstances warrant looking at these. The frequency of collection of measurements (i.e., daily, weekly) is usually established by the monitoring program documents, and might include some daily measurements during construction.

We anticipate that there will be unavoidable, short-term impacts on water quality caused by construction. These impacts will be limited in both space and time by Best Management Practices (BMPs) established for that purpose. The goal of during-construction water quality sampling is to monitor and document that BMPs are or are not working. If they are not working, new, different, or modified BMPs must be implemented quickly. During-construction monitoring includes control samples that provide background or baseline in the harbor at the time the construction-site samples are collected, and WQ impacts are assessed against these control samples, not the preconstruction samples.

Submerged Cultural Resources

With regard to the possibility of submerged cultural resources in the subject harbors, Harbors Division does not plan to conduct further study based on the following. First, the U.S. Army Corps of Engineers has indicated that previous dredging leaves almost no probability that any previously-dredged area could contain submerged cultural resources. A study of dredging limit maps reveals the only area slated for development that has not been previously dredged extends from Pier 3 to proposed Piers 4, 5 and 6 at Hilo Harbor and to the Federal Project Line. All of the area planned for development in Kawaihae Harbor has been previously dredged.

Second, Hilo and Kawaihae Harbormaster Ian Birmie conducted research of shipwrecks listed in your letter in the Hilo and Kawaihae areas using the following references: Gibbs, Jim, 1977. Shipwrecks in Paradise; Rodgers, Richard W., 1999. Shipwrecks in Hawaii; Thomas, Mifflin, 1982. Hawaiian Interisland Vessels and Hawaiian Registered Vessels; and Thomas, Mifflin, 1983. Schooner from Windward.

Mr. Birmie offers the following details which conclude that the shipwrecks do not coincide with the subject project areas:

- "PATO was a 45' wooden schooner that sank at Papaikou 25 November 1881. Papaikou is 4-5 miles north of Hilo Harbor and does not appear on the associated National Oceanic and Atmospheric Administration (NOAA) chart #19324 of Hilo Bay.
- KATE (vice KATY) LEE was a wooden schooner wrecked at Onomea Bay 2 November 1871. Onomea is 8-9 miles north of Hilo and does not appear on the NOAA chart for Hilo Bay.
- MARIA was an 84-foot wooden schooner "...reduced to a jumble of curved wood..." at Onomea landing in early 1869. See previous remarks re Onomea.
- KILAUEA HOU was a 119-foot wooden hulled steamships that was "driven ashore at Hilo" on 27 December 1900. She was abandoned after bursting seams, and was "lying in the sand on the beach" for at least three to four years. If still on the beach, she would be well out of the Federal Project Line for Hilo Harbor, at least a mile away.
- LANAKILA was a 38- or 40-foot wooden sloop that "dashed off the cliffs of Wainaku" 28 December 1949. The crew was asleep. Wainaku Point is 2-3 miles from Hilo Harbor, on the opposite side of Hilo Bay.
- KOOKI (vice KOKI) MARU was a wooden sloop that hit the Hilo Breakwater 24 June 1936. It reportedly only had a five-horsepower engine. It was unknown whether she hit the breakwater from the inside or outside.

Mr. Peter Rappa
May 31, 2001
Page Five

- SELINA was either a schooner or brig, also wood, that "wrecked on entering Hilo Harbor" 11 February 1887. She went aground at Puukaa, "500 yards from Wainaku Mill." See previous comments re Wainaku. ("Wainaku Mill is Hilo Sugar Company Mill, at Wainaku.)
- KLIKITAT was a wooden barkentine (vice bark) that went aground against the cliff at Papaikou "near Honolii" in November 1912. She broke up. The area is at least 3 miles from Hilo Harbor.
- MARTHA DAVIS was a 163-foot wooden bark (misidentified by Rodgers as a brig) that burned while "at anchor in the stream" in Hilo Bay 13 May 1905. The "streams" in Hilo Bay are the Wailuku River and the Wailoa River, both of which are some distance from today's harbor.
- LILIU was a small wooden schooner that "went ashore at Kawaihae" 22 December 1880 and was declared a total wreck. It is unlikely that any remains are in the current harbor, which is south of the former pier. The U.S. Army Corps of Engineers dredged inside the breakwater to create the harbor we know today."

If you have any questions please call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga
Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division

2



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Mr. Peter Rappa
June 29, 2001
Page Two

June 29, 2001

Mr. Peter Rappa
Environmental Review Coordinator
University of Hawaii Environmental Center
2500 Dole Street, Krauss Annex 19
Honolulu, Hawaii 96822

**Hawaii Commercial Harbors 2020 Master Plan
Draft Environmental Impact Statement**

Dear Mr. Rappa:

Thank you for your letter of April 23, 2001 which was received by the Department of Transportation, Harbors Division in which you provided comments on the above-referenced Draft Environmental Impact Statement (DEIS). We responded to your letter on May 31, 2001. The purpose of this letter is to provide additional information on several points.

Affected Environment -- Proposed Mitigation Measures

Your comment refers to Best Management Practices for runoff, sediment and erosion control. Harbors Division will comply with guidelines set forth in Section 9 of Hawaii Administrative Rules, Chapter 11-55, Appendix C. Specific control measures for included in the above-cited section for runoff, sediment and erosion control include:

- *Site-specific Best Management Practices (BNMPs) will be left up to the project contractor based on the contractor's professional experience and conditions at the site. These are the inspection and maintenance practices that will be used to maintain erosion and sediment controls: All control measures will be inspected at least once each week and following any rainfall event of 0.5 inches or greater. All measures will be maintained in good working order. If a repair is necessary, it will be initiated within 24 hours after the inspection.*
- *Built-up sediment will be removed from silt fences when it has reached one-third the height of the fence.*
- *Silt fences will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.*
- *Sediment basins will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 10 percent of the design capacity and at the end of the job.*

- *Diversion dikes will be inspected and any breaches promptly repaired.*
- *Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.*
- *A maintenance inspection report will be made promptly after each inspection by the contractor and submitted to the Department of Transportation, Harbors Division (DOT-HAR).*
- *The contractor will select a minimum of three personnel who will be responsible for inspections, maintenance and repair activities, and filling out the inspection and maintenance report, and submittal to DOT-HAR.*

Personnel selected for the inspection and maintenance responsibilities will receive training from the contractor. They will be trained in all the inspection and practices necessary for keeping the erosion and sediment controls used onsite in good working order.

Overseas Container Terminal

Your comment pertains to non-native trees "50 to 80 feet tall." You are correct that existing non-native trees will be cut down for construction of the overseas container terminal. The trees are part of an area with introduced plants. Unfortunately, cargo projections indicate the requirement for all available space and expansion into Bakers Beach lots. There will not be sufficient space for replanting.

Existing Conditions

Tables 5 and 10 (vice 9 and 10 as stated in our letter of May 31, 2001) will be annotated in Appendix E of the FEIS with regard to introduced, native and endemic species.

If you have any questions please call me at 842-1133 or Glenn Soma, Harbors Planner, at 587-2503.

Very truly yours,

Chester T. Koga
Chester T. Koga, AICP
Project Manager

Cc: Department of Transportation, Harbors Division

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June 29, 2001

Dear Petitioner:

Earlier this year you signed a petition regarding development of Kawaihae Harbor. We acknowledge your interest in this project on behalf of the State of Hawaii, Department of Transportation, Harbors Division.

This letter provides information on three aspects of the plan mentioned in the petition: the proposed liquid bulk terminal at the harbor, public access for recreation, and the cultural significance of the area.

- The proposed liquid bulk terminal at the harbor will enable shipment of petroleum and jet fuel directly to Kawaihae. Currently this fuel must be transported by truck across the island from Hilo and stored at Kawaihae. The new terminal will be constructed according to strict State and Federal standards for safety and environmental protection.
- Harbors Division plans to continue its practice of allowing public access for recreational purposes, with public safety remaining a prime consideration.
- The cultural significance of the Puukohola Heiau National Historic Site is acknowledged by maintaining a buffer zone between harbor development and the heiau. This buffer is preserved through a formal agreement between the State of Hawaii and the U.S. Department of the Interior, National Parks Service, which manages the heiau.

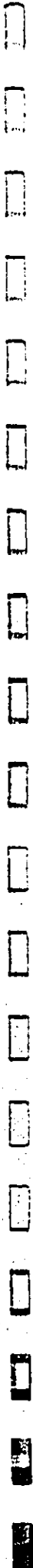
An Environmental Impact Statement detailing the harbor plans is available at the Kailua-Kona Public Library, Hilo Public Library and Bond Memorial Library.

Thank you for your interest.

Sincerely,

Chester T. Koga, AICP
Project Manager

The letter shown opposite was mailed to all people who signed the petitions published in this document. Their names are listed in the beginning of Appendix 1-B.



Appendix B

TRAFFIC ANALYSIS REPORT

Julian Ng, Incorporated

November 2000

**Traffic Analysis Report
Hawaii Commercial Harbors 2020 Master Plan**

Hilo Harbor, Hilo, Hawaii
Kawaihae Harbor, Kawaihae, Hawaii

Prepared for: State of Hawaii
Department of Transportation
Harbors Division
and
R. M. Towill Corporation

Prepared by: Julian Ng, Incorporated
P. O. Box 816
Kaneohe, Hawaii 96744

January, 2001

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**Traffic Analysis Report
Hawaii Commercial Harbors 2020 Master Plan
January, 2001**

Introduction

The State of Hawaii, Department of Transportation, Harbors Division will be constructing improvements over the next 20 years to implement the year 2020 master plan that was prepared for the commercial harbors on the island of Hawaii. The projects listed in the master plan will improve port facilities at Hilo Harbor and Kawaihae Harbor to accommodate expected increases in container shipments, bulk cargo, and cruise passengers.

A traffic study was done to evaluate existing and future traffic conditions in the vicinity of the two harbors and to identify roadway improvements that will be necessary to provide adequate access to the harbors.

Existing peak hour traffic volumes were factored to obtain estimates of future peak hour volumes. The required roadway configurations were determined from evaluations of alternative roadway layouts using vehicular density and analyses of conditions at intersections during the peak hours. The level of service concept described in the *Highway Capacity Manual* was used. Six levels are defined, using the letters A through F. The range is from Level of Service (LOS) A describing low densities or no delays to LOS F describing very high densities and very long delays at intersections. In rural areas, desirable conditions are LOS C or better; in urban areas, LOS D is acceptable.

On roadway segments, densities were used to evaluate conditions given the number of lanes. For arterial roadways with speed limits up to 45 miles per hour, level of service criteria are:

Level of Service	Traffic density (passenger cars per lane-mile)
A	density ≤ 12
B	$12 < \text{density} \leq 20$
C	$20 < \text{density} \leq 28$
D	$28 < \text{density} \leq 34$
E	$34 < \text{density} \leq 45$
F	density greater than 45

Reference: *Highway Capacity Manual*

The analysis procedure for unsignalized intersections as described in Chapter 10 of the 1997 update to the *Highway Capacity Manual* was used to determine average vehicular delays and levels of service at unsignalized intersections. In this analysis, traffic flows on the major street

(those that do not yield to other traffic) are used to determine the capacities and delays to minor flows at the intersection. From these parameters, average vehicular delays are computed and levels of service for each minor flow (major street left turns against oncoming traffic and minor street movements wishing to enter the major street) are determined using the following criteria:

Level of Service A:	0 seconds < delay ≤ 10 seconds
Level of Service B:	10 seconds < delay ≤ 15 seconds
Level of Service C:	15 seconds < delay ≤ 25 seconds
Level of Service D:	25 seconds < delay ≤ 35 seconds
Level of Service E:	35 seconds < delay ≤ 50 seconds
Level of Service F:	50 seconds < delay

A critical movement analysis as described in the 1985 edition of the *Highway Capacity Manual* was used to evaluate signalized intersections. In this analysis, conflicting movements at an intersection are summed to determine overall conditions. A sum of 1,200 vehicles per hour per lane is considered under capacity (desirable condition) and a sum greater than 1,400 would indicate over capacity (unacceptable) conditions. Between these limits, conditions would be described as "near capacity" which may or may not be acceptable.

Existing Traffic

The State Highways Division estimates the average daily traffic on defined segments of all highway facilities in the State. For the island of Hawaii, estimates are made for even-numbered years based on traffic count data collected in those years. The latest published highway statistics are for year 1996. Tables 1 and 2 summarize the recent estimates of average daily traffic on several roadway segments near the commercial harbors.

Table 1
Average Daily Traffic
Vicinity of Hilo Harbor

	Kulito Street (1)	Kalaniana'ole Street (2)	Kamehameha Avenue (3)	Kanoelohua Avenue (4)
1988	2,228	14,497	20,699	20,974
1990	4,678	18,474	24,123	29,076
1992	4,166	17,142	25,705	27,729
1994	3,228	17,825	22,690	27,712
1996	1,639	14,504	18,846	20,363

Note: (1) North of Kalaniana'ole Street; (2) between Kuliko Street and Kamehameha Avenue; (3) between Kalaniana'ole Street and Manono Street; (4) between Kamehameha Avenue and Hualani Street

Source: State Highways Division, *Traffic Summary, Island of Hawaii 1996*.

Table 2
Average Daily Traffic
Vicinity of Kawaihae Harbor

	Akoni Pule Highway (1)	Kawaihae Road (2)	Kawaihae Road (3)	Q. Kaahumanu Highway (4)
1988	3,841	3,797	4,729	4,850
1990	4,238	5,389	6,261	8,298
1992	3,951	4,914	6,200	7,273
1994	3,987	6,106	5,953	8,949
1996	4,378	5,462	6,533	9,254

Note: (1) North of Kawaihae Wharf; (2) between Kawaihae Wharf and Queen Kaahumanu Highway; (3) between Queen Kaahumanu Highway and Akulani Street; (4) between Kawaihae Road and Waikoloa Road

Source: State Highways Division, Traffic Summary, Island of Hawaii 1996.

The State Highways Division average daily traffic estimates indicate that traffic volumes near Hilo Harbor vary considerably, but there is no definite upward or downward trend. The daily traffic estimates near Kawaihae Harbor also exhibit considerable variation but show an increasing trend on all roadways.

The State Highways Division has completed the collection of the 2000 traffic counts at various locations on the island of Hawaii. Tables 3 and 4 summarize the daily and peak hour volumes at several locations near the two commercial harbors which correspond to the segments described in Tables 1 and 2. Tables 3 and 4 also show the arithmetic averages of the daily traffic estimates for 1988, 1990, 1992, 1994, and 1996 and the most recent 24-hour count totals and peak hour totals (of two-way traffic).

Table 3 shows that peak hour traffic volumes in the immediate vicinity of Hilo Harbor are generally higher in the AM Peak Hour than in the PM Peak Hour. On Kanoiehewa Avenue, however, PM Peak Hour volumes tend to be higher than AM Peak Hour volumes. As shown in Table 4, traffic volumes near Kawaihae Harbor are higher in the PM Peak Hour than in the AM Peak Hour.

From the 2000 traffic count data, estimates of existing traffic volumes at two critical intersections near each harbor were developed. Exhibit 2 shows the peak hour volumes at the signalized intersection of Kanoiehewa Avenue and Kamehameha Avenue and at the unsignalized intersection of Kalaniana'ole Street and Kuito Street (and the nearby intersection with Silva Street). Exhibit 3 shows the peak hour volumes at the presently unsignalized intersections of Kawaihae Road and Queen Kaahumanu Highway and Kawaihae Road assuming all harbor traffic use a single access road.

Table 3
Recent Traffic Count Data
Vicinity of Hilo Harbor

	Kuhio Street (1)	Kalaniana'ole Street (2)	Kamehameha Avenue (3)	Kanoiehewa Avenue (4)
1988-1996 *	3,190	12,490	22,410	25,170
1998 daily	2,654	12,769	18,202	22,032
AM Peak Hour	329	1,234	1,642	1,697
PM Peak Hour	249	1,007	1,498	1,827
2000 daily	2,300	15,764	21,569	24,665
AM Peak Hour	220	1,400	1,894	1,821
PM Peak Hour	175	1,264	1,898	2,001

Note: (1) North of Kalaniana'ole Street; (2) between Kuhio Street and Kamehameha Avenue; (3) between Kalaniana'ole Street and Manono Street; (4) between Kamehameha Avenue and Hualani Street. * average of ADTs

Source: State Highways Division.

Table 4
Recent Traffic Count Data
Vicinity of Kawaihae Harbor

	Akoni Pule Highway (1)	Kawaihae Road (2)	Kawaihae Road (3)	Q. Kaahumanu Highway (4)
1988-1996 *	4,080	5,135	5,935	7,725
1998 daily	4,163	6,197	6,463	9,229
AM Peak Hour	281	433	463	631
PM Peak Hour	315	442	509	685
2000 daily	5,244	6,725	7,650	10,365
AM Peak Hour	355	442	565	734
PM Peak Hour	507	603	740	923

Note: (1) North of Kawaihae Wharf; (2) between Kawaihae Wharf and Queen Kaahumanu Highway; (3) between Queen Kaahumanu Highway and Akulani Street; (4) between Kawaihae Road and Waikoloa Road. * average of ADTs

Source: State Highways Division.

The segments of Kamehameha Avenue east of Kanoiehewa Avenue and on Kalaniana'ole Street west of Kuhio Street operate poorly during existing peak hours, due to high volumes on narrow streets. The unsignalized intersections of Kalaniana'ole Avenue with Silva Street and with

Kuhio Street are in close proximity with each other and were analyzed as a single unsignalized intersection. The analyses show very long delays and poor levels of service for traffic from Silva Street. All traffic leaving or entering Hilo Harbor pass through the signalized intersection of Kamehameha Avenue and Kanoelohua Avenue. Analyses of this intersection indicate that it is presently operating at under capacity conditions in the AM Peak Hour and near capacity conditions in the PM Peak Hour.

Table 5
Existing Levels of Service
Vicinity of Hilo Harbor

	AM Peak Hour	PM Peak Hour
Roadway segments (density, LOS)		
Kamehameha Avenue west of Kanoelohua Ave.	18.9 B	20.3 C
westbound		
eastbound	19.4 B	22.4 C
Kamehameha Avenue east of Kanoelohua Ave.	45.0 E	44.8 E
westbound		
eastbound	50.8 F	45.9 F
Kalaniana'ole Avenue west of Kuhio Street	37.8 E	30.4 D
westbound		
eastbound	32.9 D	28.6 D
Kalaniana'ole Avenue east of Kuhio Street	31.0 D	22.0 C
westbound		
eastbound	24.6 C	23.1 C
Kanoelohua Avenue south of Kamehameha Avenue	16.3 B	19.9 B
southbound		
northbound	16.6 B	18.1 B
Unsignalized Intersection, Kalaniana'ole Avenue, Silva Street, Kuhio Street (average delay in seconds, LOS)		
Kuhio Street approach	18.6 C	12.9 B
left turns to Silva Street	8.8 A	8.6 A
left turns to Kuhio Street	9.6 A	8.7 A
Silva Street approach	163.1 F	57.1 F
Critical Movement Sum	1,188	1,234
Overall intersection condition	under capacity	near capacity

In Kawaihae, acceptable (LOS C or better) conditions were found for roadway segments and at intersections. Findings of the analyses of existing conditions are summarized in Table 6.

Table 6
Existing Levels of Service
Vicinity of Kawaihae Harbor

	AM Peak Hour	PM Peak Hour
Roadway segments (density, LOS)		
Akoni Pule Highway, north of harbor	5.4 A	11.0 A
northbound		
southbound	10.4 A	10.3 A
Kawaihae Road, south of harbor	11.2 A	15.0 B
northbound		
southbound	11.3 A	15.7 B
Queen Kaahumanu Highway, south of Kawaihae Rd.	9.2 A	18.5 B
northbound		
southbound	17.7 B	15.2 B
Kawaihae Road, east of Queen Kaahumanu Highway	20.3 C	16.3 B
westbound		
eastbound	8.4 A	21.4 C
Unsignalized Intersections (average delay in seconds, LOS)		
Kawaihae Harbor access road at Kawaihae Road	7.9 A	7.8 A
left turns from Kawaihae Road		
left turn to Kawaihae Road	11.4 B	11.8 B
right turn to Kawaihae Road	9.5 A	10.1 B
Queen Kaahumanu Highway at Kawaihae Road	8.1 A	8.1 A
left turns from Kawaihae Road		
left turn to Kawaihae Road	20.4 C	21.5 C
right turn to Kawaihae Road	9.1 A	11.1 B

Future Traffic

Future traffic volumes at the critical intersections near the commercial harbors have been estimated for the year 2020 by factoring existing traffic volumes. Future traffic movements in and out of Hilo Harbor were estimated to increase by 40% over existing volumes, based on the description of the harbor improvements for year 2020. Similarly, future traffic volumes in and out of Kawaihae Harbor were estimated to increase 200% over existing volumes. Other, non-harbor traffic volumes were increased by 30% to 50% near Hilo Harbor and by 110% near Kawaihae Harbor.

Exhibits 4 and 5 show the future peak hour traffic assignments, assuming existing roadway configurations. The results of the analyses are shown in Table 7 (Hilo Harbor) and Table 8 (Kawaihae Harbor).

Table 7 also show the results of the analyses assuming that Kamehameha Avenue east of Kanoelohua Avenue is widened by one lane in each direction, and Kalaniana'ole Street is widened to five lanes (two in each direction plus a dedicated left turn lane). The analysis of the assumed improved condition indicates that further improvement of Kamehameha Avenue east of Kanoelohua Avenue may be needed in order to achieve LOS D or better conditions.

Table 7
Future Levels of Service
Vicinity of Hilo Harbor

Existing Roadway Layout	Improved Kalaniana'ole Street	
	AM Pk. Hr.	PM Pk. Hr.
Existing roadway segments (density, LOS)		
Kamehameha Avenue west of Kanoelohua Ave.	28.3 D	30.6 D
westbound	28.3 D	30.6 D
eastbound	29.2 D	33.6 D
Kamehameha Avenue east of Kanoelohua Ave.	67.8 F	68.8 F
westbound	67.8 F	68.8 F
eastbound	76.3 F	34.4 E
Kalaniana'ole Avenue west of Kuhio Street	49.3 F	24.6 C
westbound	49.3 F	24.6 C
eastbound	43.0 F	18.5 B
Kalaniana'ole Avenue east of Kuhio Street	40.4 E	20.2 C
westbound	40.4 E	20.2 C
eastbound	32.1 D	16.1 B
Kamehameha Avenue south of Kamehameha Avenue	24.5 C	24.5 C
southbound	24.5 C	24.5 C
northbound	25.0 C	27.1 C

Unsignalized Intersection, Kalaniana'ole Avenue, Siliva Street, Kuhio Street (average delay in seconds, LOS)

Kuhio Street approach	59.1 F	20.6 C	31.1 D	15.1 C
left turns to Siliva Street	9.4 A	9.2 A	9.6 A	9.3 A
left turns to Kuhio Street	10.9 B	9.3 A	11.2 B	9.4 A
Siliva Street approach	>300 F	>300 F	>300 F	127.1 F

Signalized Intersection, Kamehameha Avenue and Kamehameha Avenue
Critical Movement Sum 1,788 1,853 1,118 1,200
Overall intersection condition over capacity near capacity near capacity

Table 8 shows that peak hour conditions on Kawaihae Road south of the harbor will be unacceptable if no changes are made to the roadway system. Queen Kaahumanu Highway to the south and Kawaihae Road to the east would also be congested.

Table 8
Future Levels of Service
Vicinity of Kawaihae Harbor

Existing Roadways	AM Peak Hour	PM Peak Hour
Roadway segments (density, LOS)		
Akoni Pule Highway, north of harbor	12.3 B	25.6 C
northbound	12.3 B	25.6 C
southbound	24.5 C	22.5 C
Kawaihae Road, south of harbor	31.1 D	34.4 E
northbound	31.1 D	34.4 E
southbound	28.3 C	43.2 E
Queen Kaahumanu Highway, south of Kawaihae Rd.	19.3 B	38.6 E
northbound	19.3 B	38.6 E
southbound	37.2 E	32.0 D
Kawaihae Road, east of Queen Kaahumanu Highway	50.1 F	37.2 E
westbound	50.1 F	37.2 E
eastbound	22.2 C	55.4 F

Unsignalized Intersections (average delay in seconds, LOS)

Kawaihae Harbor access road at Kawaihae Road	9.6 A	8.7 A
left turns from Kawaihae Road	9.6 A	8.7 A
left turn to Kawaihae Road	35.2 E	41.5 E
right turn to Kawaihae Road	12.9 B	26.3 D
Queen Kaahumanu Highway at Kawaihae Road	10.5 B	11.4 B
left turns from Kawaihae Road	10.5 B	11.4 B
left turn to Kawaihae Road	>300 F	>300 F
right turn to Kawaihae Road	11.3 B	109.9 F

The results shown in Tables 7 and 8 support other studies that have recommended roadway improvements in the vicinity of the harbors. In Hilo, the widening of Kalaniana'ole Avenue to four lanes with separate turning lanes at major intersections has been identified as a "Tier 1" project (to be programmed for construction prior to 2005) in the *Hawaii Long Range Land Transportation Plan (1998)*. As indicated in Table 7, this improvement will provide LOS D or better conditions along Kalaniana'ole Street; additional improvements may be needed on Kamehameha Avenue east of Kanoelohua Avenue.

In Kawaihae, the construction of a new two-lane road from Queen Kaahumanu Highway to Akoni Pule Highway that will bypass the harbor area is also listed as a Tier 1 project in the long-range plan. In addition, a new road between Waimea and Kawaihae has been proposed as a Tier 2 (2006-2010) project. The widening of Queen Kaahumanu Highway to a four-lane divided highway with improvements at major intersections is a Tier 3 (2011-2020) project in the long-range plan. With these improvements in place, there would be adequate access to the harbors.

The proposed bypass road will reduce traffic volumes in the immediate vicinity of Kawaihae Harbor. Access would be provided by the existing road, which would be connected at an improved junction with the future Queen Kaahumanu Highway to Akoni Pule Highway corridor. Exhibit 6 shows estimated traffic volumes for the future peak hours with all of the proposed improvements in place. Stop controls at the future intersection of Queen Kaahumanu Highway and Kawaihae Road would not provide adequate service; if signalized, the intersection would operate at desirable under capacity condition (critical movement sums of 885 in the AM Peak Hour of 980 in the PM Peak Hour). Table 9 shows the results of the analyses when these improvements are considered.

Table 9
Future Levels of Service
Vicinity of Kawaihae Harbor

Proposed Roadway System	AM Peak Hour	PM Peak Hour
Roadway segments (density, LOS)		
Akoni Pule Highway, north of harbor northbound	9.9 A	21.2 C
Akoni Pule Highway, north of harbor southbound	15.2 B	12.4 B
Kawaihae Road, between harbor access roads northbound	14.9 B	19.0 B
Kawaihae Road, between harbor access roads southbound	16.2 B	21.2 C
Kawaihae Road, south of harbor northbound	24.3 C	20.5 C
Kawaihae Road, south of harbor southbound	19.2 B	33.6 D
Harbor Bypass Road, north of Kawaihae Rd. northbound	24.3 C	17.4 B
Harbor Bypass Road, north of Kawaihae Rd. southbound	7.6 A	10.4 A
Queen Kaahumanu Highway, south of Kawaihae Rd. northbound	14.3 B	16.6 B
Queen Kaahumanu Highway, south of Kawaihae Rd. southbound	13.7 B	19.2 B
Kawaihae Road, east of Queen Kaahumanu Highway westbound	8.3 A	10.4 A
Kawaihae Road, east of Queen Kaahumanu Highway eastbound	6.8 A	13.9 B
Unsignalized Intersections (average delay in seconds, LOS)		
Kawaihae Harbor north access road at Kawaihae Road left turns from Kawaihae Road	8.2 A	7.9 A
Kawaihae Harbor north access road at Kawaihae Road left turn to Kawaihae Road	13.6 B	14.0 B
Kawaihae Harbor north access road at Kawaihae Road right turn to Kawaihae Road	10.2 B	11.1 B
Kawaihae Harbor south access road at Kawaihae Road left turns from Kawaihae Road	8.5 A	8.5 A
Kawaihae Harbor south access road at Kawaihae Road left turn to Kawaihae Road	17.4 C	16.5 C
Kawaihae Harbor south access road at Kawaihae Road right turn to Kawaihae Road	10.7 B	15.1 C

Conclusions and Recommendations

The traffic analyses indicate that a single access to Hilo Harbor from Kalamianaole Street would be adequate. However, the harbor master plan indicates that additional access roads will be constructed to separate the access to differing functions within the harbor area. Intersection levels of service would be improved if additional access roads are provided.

The traffic analyses for Kawaihae Road show that a decrease in through traffic near the harbor and the addition of a second access road from Kawaihae Road would provide acceptable peak hour conditions along the roadway and at the critical intersections.

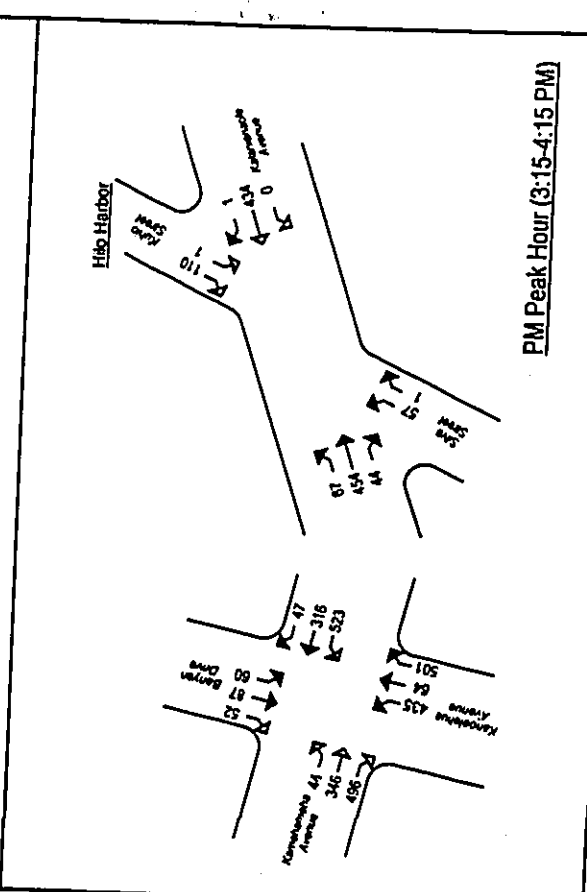
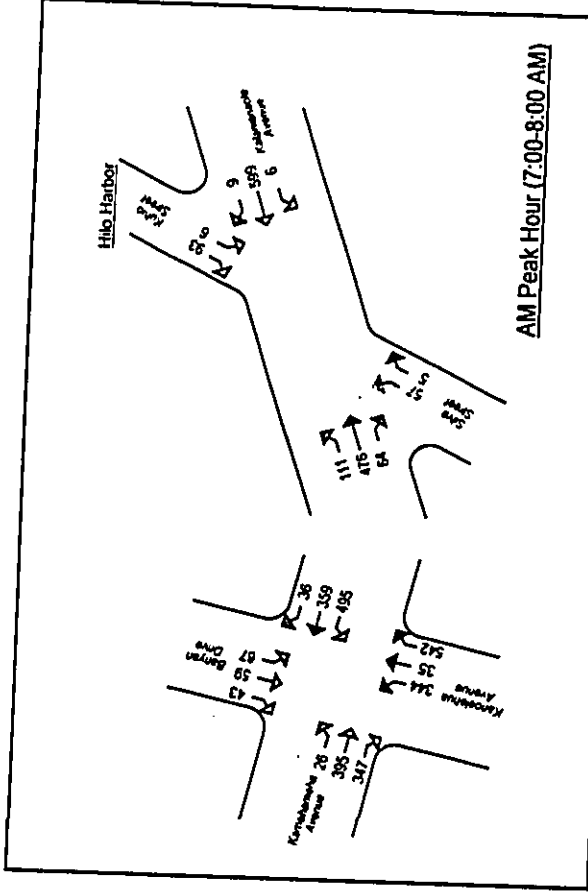
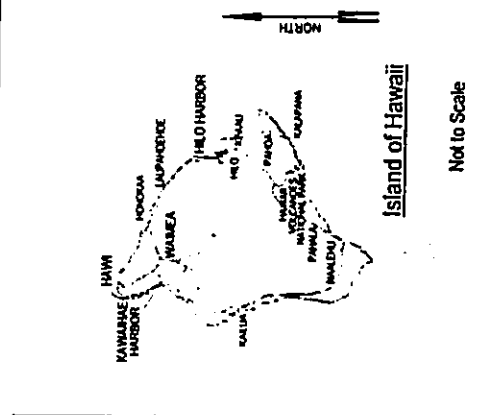
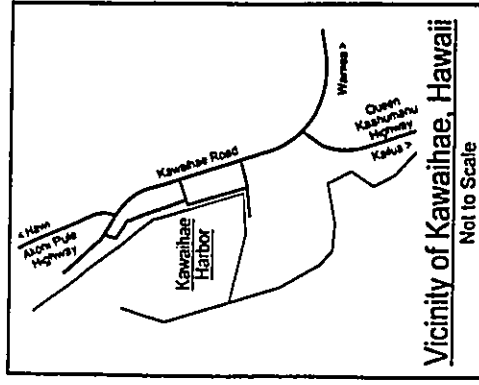
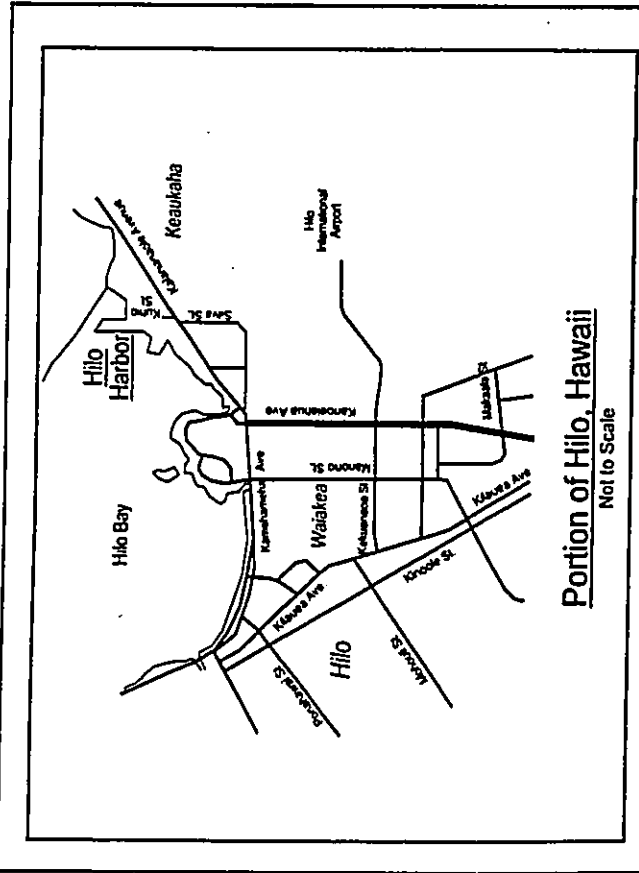
In both cases, the implementation of the roadway improvements previously identified in an islandwide study will be necessary to maintain adequate access to the harbor facilities. These improvements include:

- Widening of Kalamianaole Street (Kamehameha Avenue to Kuhio Street) to five lanes (two in each direction plus a left turn lane) [Tier 1].
- Construction of a new roadway bypassing the Kawaihae Harbor area (Queen Kaahumanu Highway to Akoni Pule Highway) [Tier 1].
- Construction of a new roadway between Waimea and Kawaihae (Mamalahoa Highway to Queen Kaahumanu Highway) [Tier 2].
- Widening of Queen Kaahumanu Highway south of Kawaihae Road [Tier 3].

"Tiers" were used in the islandwide plan to identify a timetable for the proposed improvements. Tier 1 projects were to be programmed for construction prior to 2005, Tier 2 between 2006 and 2010, and Tier 3 between 2011 and 2020.

An additional turn lane from westbound Kamehameha Avenue to southbound Kanoelohua Avenue has been identified as a mitigation measure to improve conditions and provide adequate access. A new project could be defined:

- Widening of Kamehameha Avenue (east of Kanoelohua Avenue) to five lanes.



**Hawaii Commercial Harbors
2020 Master Plan
Traffic Analysis**

Existing Peak Hour Traffic
Vicinity of Hilo Harbor

Prepared by: Julian Ng, Inc. January 2001

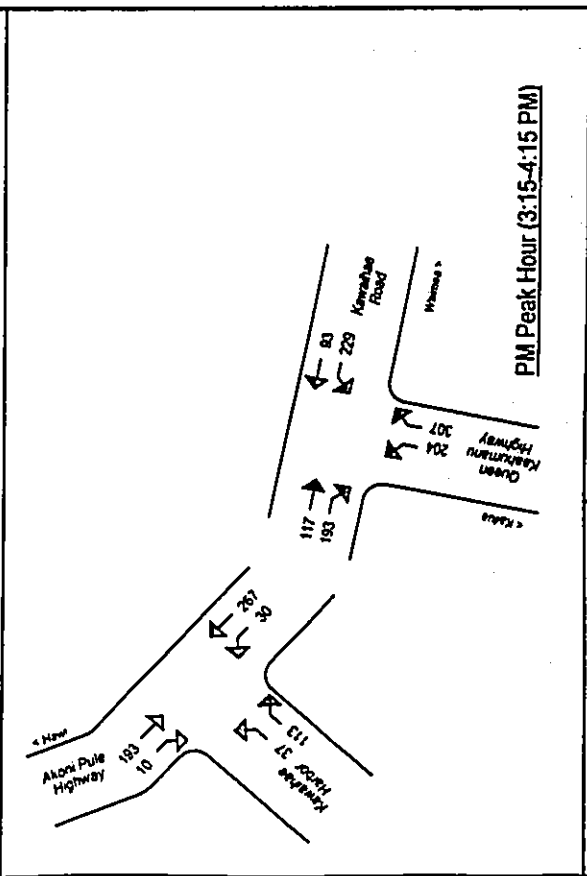
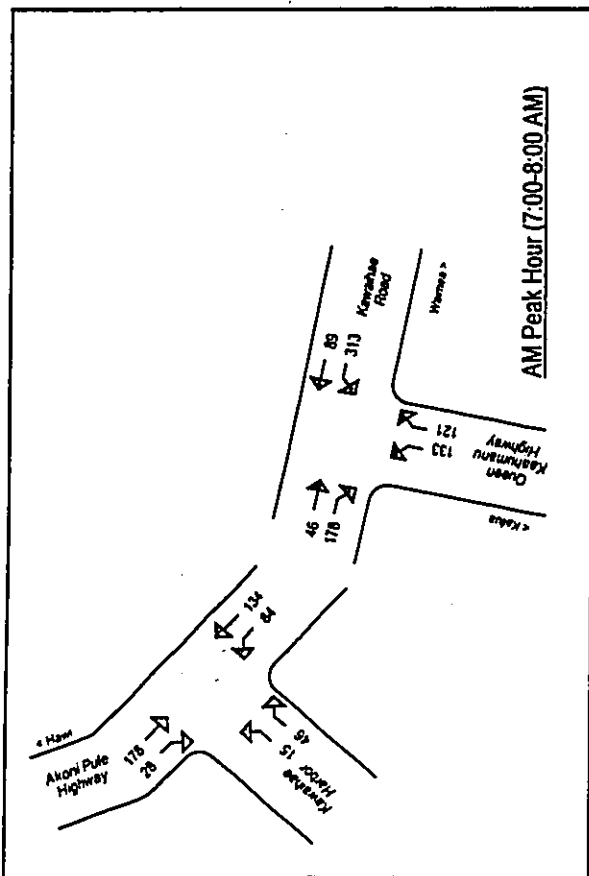
Exhibit **2**

**Hawaii Commercial Harbors
2020 Master Plan
Traffic Analysis**

Project Location and
Vicinity Maps

Prepared by: Julian Ng, Inc. January 2001

Exhibit **1**

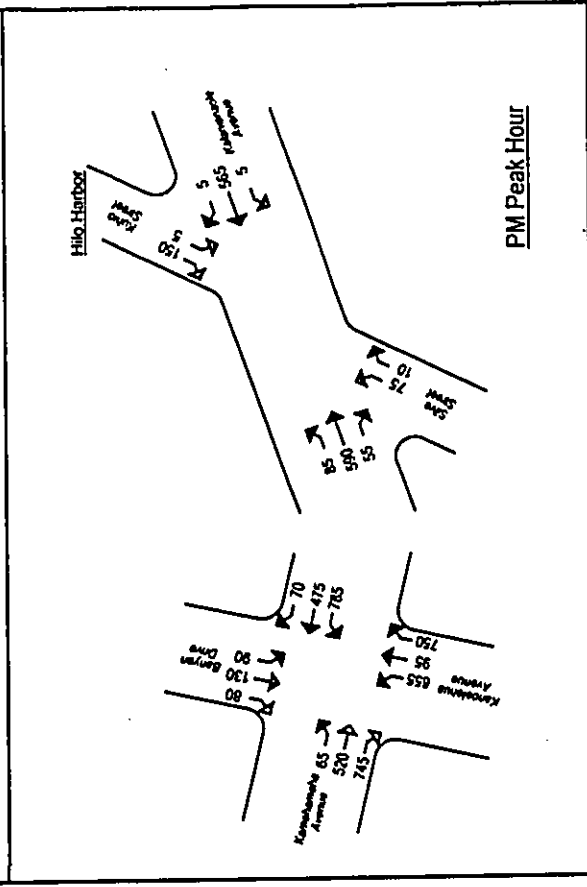
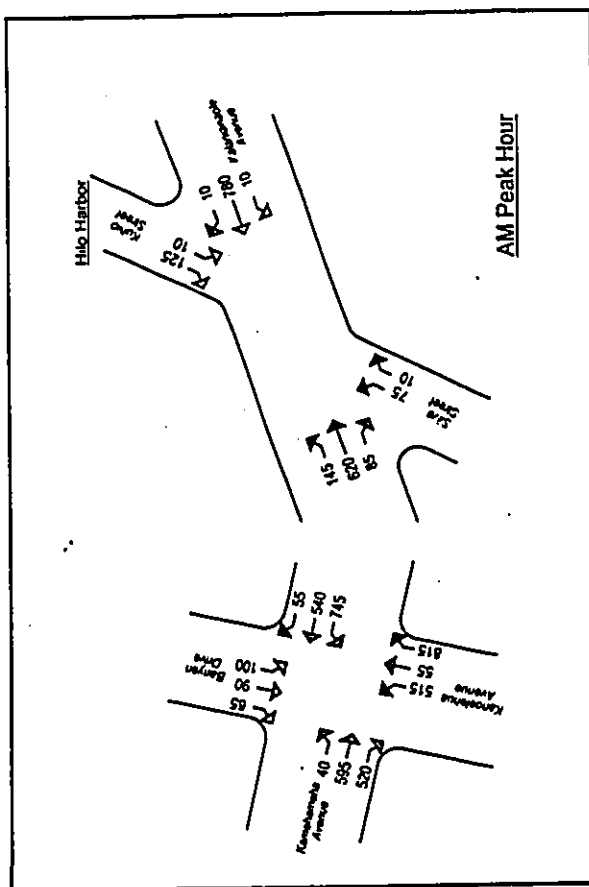


**Hawaii Commercial Harbors
2020 Master Plan
Traffic Analysis**

**Existing Peak Hour Traffic
Vicinity of Kawaihae Harbor**

prepared by: Julian Ng, Inc. January 2001

Exhibit 3



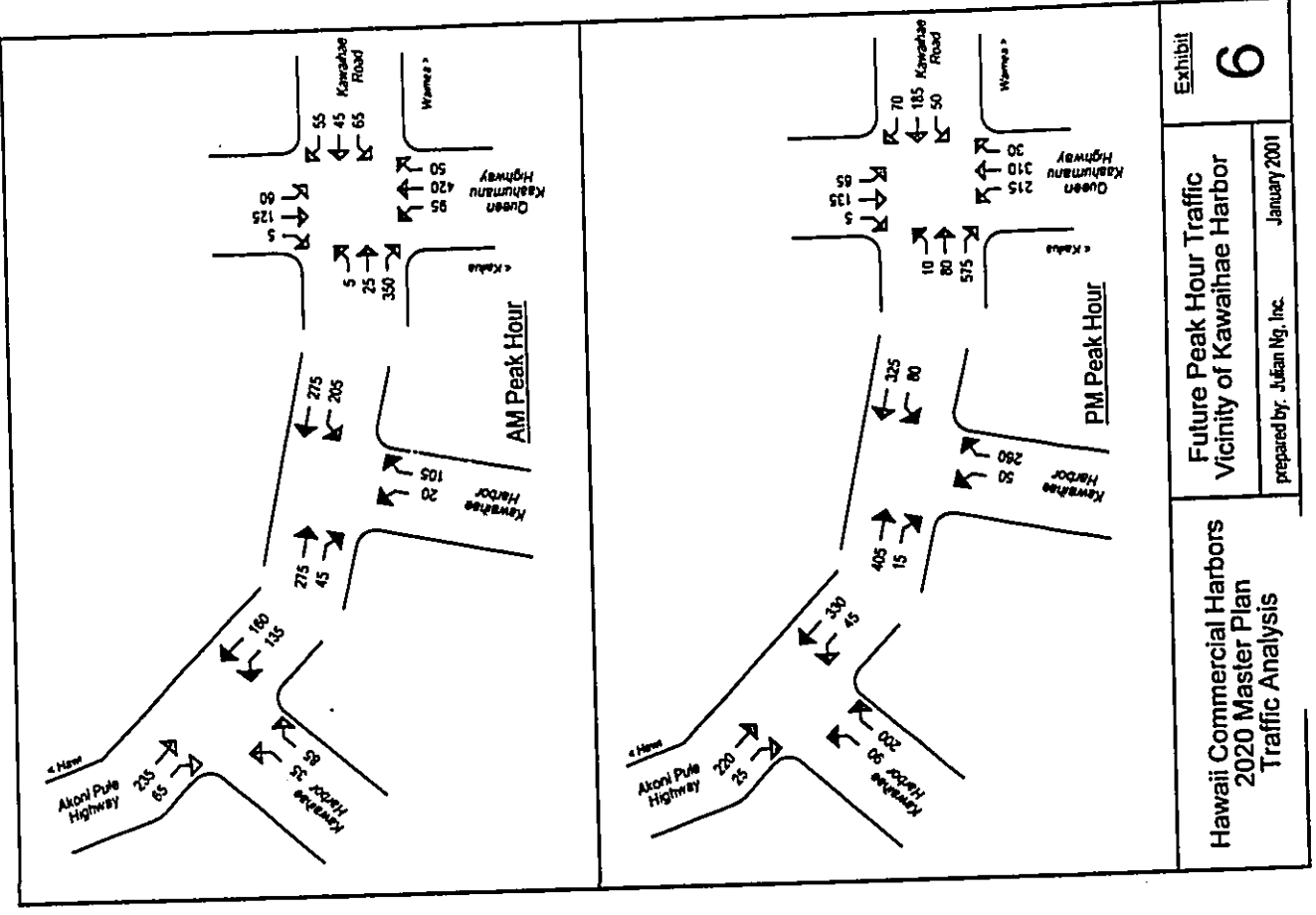
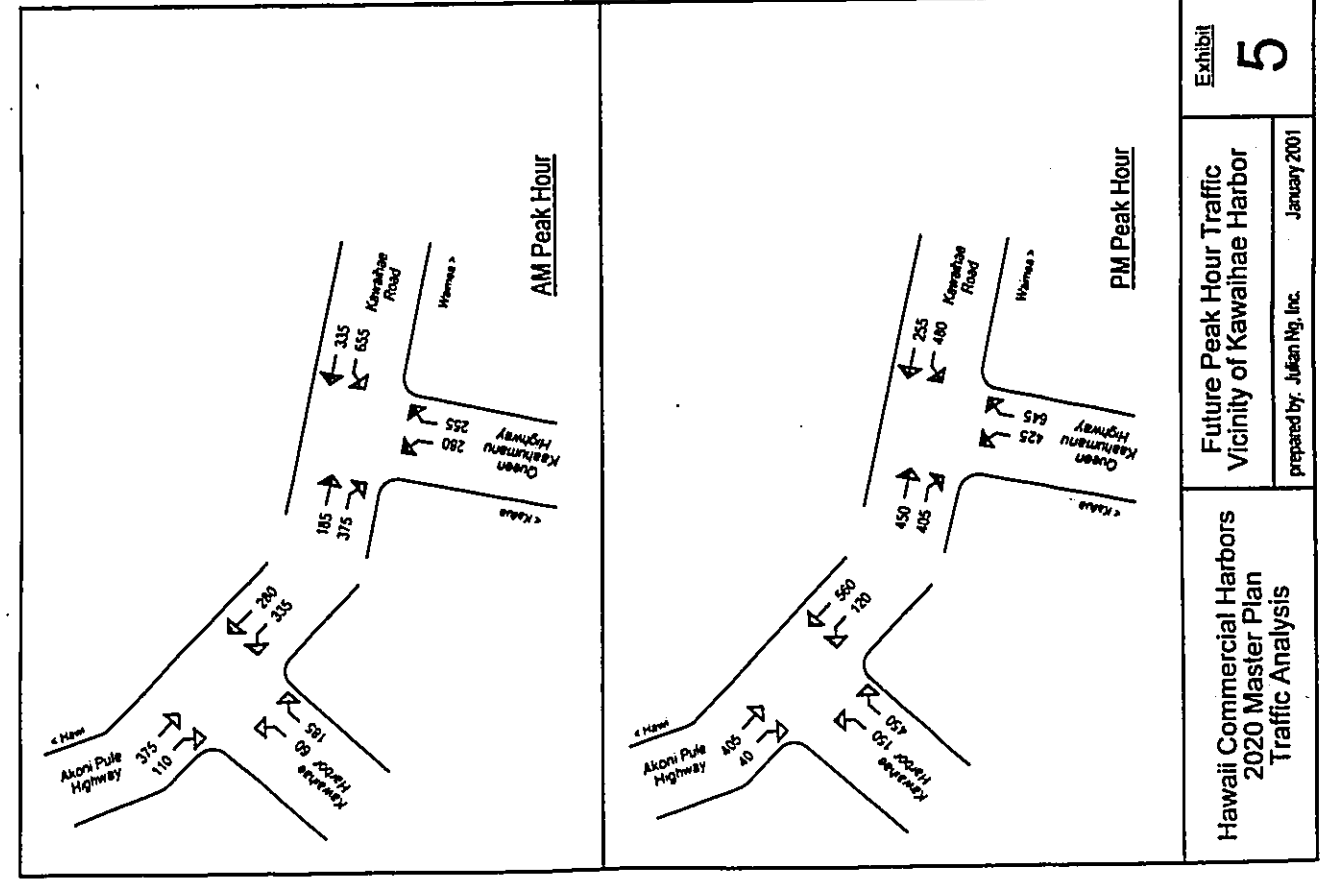
**Hawaii Commercial Harbors
2020 Master Plan
Traffic Analysis**

**Future Peak Hour Traffic
Vicinity of Hilo Harbor**

prepared by: Julian Ng, Inc. January 2001

Exhibit 4





Appendix C

**BOTANICAL SURVEY
HILO HARBOR**

**Winona P. Char
Char & Associates, Inc.**

October 2000

**BOTANICAL SURVEY
HILO HARBOR
SOUTH HILO DISTRICT, HAWAII**

INTRODUCTION

A survey of the botanical resources was made for the undeveloped portions of the Hilo Harbor property. These are the areas proposed for the overseas container terminal and the ocean research facility.

The field studies were conducted on 27 September 2000. The primary objectives of the survey were to:

- 1) provide a general description of the vegetation on the two parcels;
- 2) inventory the flora;
- 3) search for threatened and endangered species as well as species of concern; and
- 4) identify areas of potential environmental problems or concerns and propose appropriate mitigation measures.

SURVEY METHODS

Prior to undertaking the field studies, site maps and a recent colored aerial photograph were examined to determine vegetation cover patterns, terrain characteristics, access, boundaries, and reference points. The proposed ocean research site was accessed via Oceanview Drive. An unpaved road provided access to the proposed overseas container terminal site; the unpaved road accesses the rubble mound breakwater.

**BOTANICAL SURVEY
HILO HARBOR
SOUTH HILO DISTRICT, HAWAII**

by

Winona P. Char

CHAR & ASSOCIATES

Botanical Consultants
Honolulu, Hawaii

Prepared for: **R.M. TOWILL CORPORATION**

October 2000

forest are gunpowder (*Trema occidentalis*) and bingabing (*Macaranga mappia*) trees. Ground cover is sparse under the dense tree canopy, consisting primarily of leaf and branch litter. Scattered here and there are vines of golden pothos or taro vine (*Epipremnum pinnatum*). Around the edges of the forest where there is more light, there are dense, tall mats of California grass (*Brachyaria mutica*). Vines of maile-pilau (*Paederia foetida*) form a dense tangle over the woody components.

Along the mauka portion of Oceanview Drive, there is a line of trees composed primarily of bingabing and *Macaranga tararua* with smaller patches of hau (*Hibiscus tiliaceus*). Also found in this area is a small patch of bananas (*Musa X paradisiaca*). Again, California grass and a number of weedy species are abundant alongside the margins of this line of trees. The indigenous seabean or ka'e'e (*Mucuna gigantea*), with its rounded clusters of apple-green flowers, is locally common.

Overseas Container Terminal

The forest here is from 50 to 80 feet tall and consists of a mixture of trees which include Chinese banyan, ironwood, guaruma (*Cecropia obtusifolia*), melalechia (*Melaleuca umbellata*), bingabing, African tulip tree (*Spathodea campanulata*), mango (*Mangifera indica*), coconut, avocado, and *Eucalyptus* sp. Stands of ironwood, false kamani, and tree heliotrope (*Tournefortia argentea*) are found along the shoreline.

Understorey vegetation consists of saplings of the trees mentioned above as well as a mixture of various shrubs which include pikake hohono (*Chromolaena chinensis*), white shrimp plant (*Justicia hetanica*), dog tail (*Buddleia asiatica*), sourbush (*Pithecia carolinensis*), and odontonema (*Odontonema strictum*). Vines

of maile-pilau, moonflower (*Ipomoea alba*), and maunaloa (*Canavalia cathartica*) are locally abundant. California grass and Hilo grass (*Paspalum conjugatum*) are abundant along the margins of this forested area.

The camp sites scattered through this parcel support a few ornamental species as well as papaya and young coconut trees.

DISCUSSION AND RECOMMENDATIONS

The vegetation on the undeveloped portions of the two parcels is dominated by introduced or alien plant species such as bingabing, Chinese banyan, California grass, etc. Introduced plants are all those species which were introduced by humans, intentionally or accidentally, after Western contact, that is, Cook's discovery of the Hawaiian Islands in 1778. This is not surprising as the two parcels appear to have been disturbed for a long time; there are remnants of former structures such as concrete blocks on both parcels.

Of a total of 71 species observed on the parcels, 60 (85%) are introduced; 3 (4%) are originally of Polynesian introduction; and 8 (11%) are native. All the native species are indigenous, that is, they are native to the Hawaiian Islands and elsewhere. These plants are the pakahakaha fern (*Pteropeltis thurbergiana*), moa (*Psittolium nidium*), koali'awe (*Ipomoea indica*), seabean (*Mucuna gigantea*), popolo (*Solanum americanum*), hau (*Hibiscus tiliaceus*), *Pycreus polystachyus* sedge, and hala (*Pandanus tectorius*).

None of the plants found on the unmaintained portions of the two parcels is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife

Service 1999). All of the plants can be found in similar wet, disturbed, windward habitats throughout most of the main Hawaiian Islands.

The proposed development of the two parcels is not expected to have a significant negative impact on the botanical resources. There are no botanical reasons to impose any restrictions, conditions, or impediments to proposed development of these two parcels.

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- U.S. Fish and Wildlife Service. 1999. U.S. Fish and Wildlife Service species list, plants. March 23, 1999. Pacific Islands Ecoregion Office, Honolulu, HI.
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PLANT SPECIES LIST — Hilo Harbor, Hawai'i

The following checklist is an inventory of the plants observed during the field studies. The plant names are arranged alphabetically by families within each of three groups—Ferns and Fern Allies, Dicots, and Monocots. The taxonomy and nomenclature of the Ferns and Fern Allies follow Lamoureux (1988), while the flowering plants, Dicots and Monocots, are in accordance with Wagner *et al.* (1990). The few recent name changes for the flowering plants follow those reported in the Hawaii Biological Survey series (Evenhuis and Miller, 1995-1998; Evenhuis and Eldredge, 1999).

For each species, the following information is provided:

1. Scientific name with author citation.
2. Common English and/or Hawaiian name(s), when known.
3. Biogeographic status. The following symbols are used:
 - I = indigenous = native to the Hawaiian Islands and also elsewhere.
 - I? = questionably indigenous = data not clear if dispersal to islands by natural or human-related mechanisms, but weight of evidence suggests probably natural.
 - P = Polynesian introduction = plants originally of Polynesian introduction prior to Western contact, that is, Cook's discovery of the islands in 1778.
 - X = introduced or alien = all those plants brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western contact (1778).

Scientific name	Common name	Status
FERNS & FERN ALLIES		
NEPHROLEPIDACEAE (Swordfern family)		
<i>Nephrolepis multiflora</i> (Roxb.) Jarrett ex Morton	hairy swordfern, 'okupukupu	X
POLYPODIACEAE (Common fern family)		
<i>Phlebodium aureum</i> (L.) J. Sm.	rabbit's foot fern, lauau'e haole	X
<i>Phymatosorus scolopendria</i> (Burm.) Pic.-Ser.	lauau'e, lauwa'e	X
<i>Pleopeltis thunbergiana</i> Kaulf.	pakahakaha, 'ekaha 'akolea	I
PSILOTAACEAE (Whisk fern family)		
<i>Psilotum nudum</i> (L.) Beauv.	moa, moa nahele, pipi	I
FLOWERING PLANTS		
DICOTS		
ACANTHACEAE (Acanthus family)		
<i>Dicliptera chinensis</i> (L.) Juss.	dicliptera	X
<i>Jurinea belandica</i> L.	white shrimp plant	X
<i>Oxanthoneura strictum</i> (Nees) Kuntze	oxanthoneura	X
AMARANTHACEAE (Amaranth family)		
<i>Amaranthus spinosus</i> L.	spiny amaranth, pakani kuku	X
ANACARDIACEAE (Mango family)		
<i>Mangifera indica</i> L.	mango, manako	X
ASTERACEAE (Daisy family)		
<i>Ageratum conyzoides</i> L.	milie hohono	X
<i>Bidens pilosa</i> L.	Spanish needle, ki, ki nche	X
<i>Crematophyllum crispifolium</i> (Berth.) S. Moore	false daisy	X
<i>Eclipta prostrata</i> (L.) L.	sourbush, pluchen	X
<i>Pluchea carolinensis</i> (Jacq.) G. Don	wedelia	X
<i>Sparganthis trilobata</i> (L.) Pruski	nodeweed	X
<i>Synedrella nodiflora</i> (L.) Gaertn.		X
BALSAMINACEAE (Touch-me-not family)		
<i>Impatiens wallerana</i> J.D. Hook	impatiens	X

Scientific name	Common name	Status	Scientific name	Common name	Status
BIGNONIACEAE (Bignonia family) <i>Spathodea campanulata</i> P. Beauv.	African tulip tree	X	MALVACEAE (Mallow family) <i>Hibiscus biliaceus</i> L.	hau	?
BORAGINACEAE (Borage family) <i>Tournefortia argentea</i> L.f.	tree heliotrope	X	MORACEAE (Mulberry family) <i>Ficus microcarpa</i> L.f.	Chinese banyan	X
BUDDLEIACEAE (Butterfly bush family) <i>Buddleia asiatica</i> Lour.	dog tail, huele'ilio	X	MYRTACEAE (Myrtle family) <i>Eucalyptus</i> sp.	gum tree, eucalyptus	X
CAPRIFOLIACEAE (Honeysuckle family) <i>Sambucus mexicana</i> K. Presl ex A. DC.	Mexican elder, elderberry	X	PLANTAGINACEAE (Plantain family) <i>Plantago major</i> L.	broad-leaved plantain, laukahi	X
CARICACEAE (Papaya family) <i>Carica papaya</i> L.	papaya, mikana	X	RUBIACEAE (Coffee family) - <i>Paederia foetida</i> L.	maile-pilau	X
CASUARINACEAE (She-oak family) <i>Casuarina equisetifolia</i> L.	ironwood, paina	X	SOLANACEAE (Nightshade family) <i>Solanum americanum</i> Mill.	popolo, glossy nightshade	?
CECROPIACEAE (Cecropia family) <i>Cecropia obtusifolia</i> Bertol.	guaruma	X	STERCULIACEAE (Cacao family) <i>Melochia umbellata</i> (Houtt.) Stapf	melochia	X
COMBIBETACEAE (Indinn almond family) <i>Terminalia catappa</i> L.	tropical almond, false kamani	X	ULMACEAE (Elm family) <i>Trema occidentalis</i> (L.) Blume	gunpowder tree, charcoal tree	X
CONVOLVULACEAE (Morning glory family) <i>Ipomoea alba</i> L. <i>Ipomoea indica</i> (J. Burm.) Merr. <i>Ipomoea triloba</i> L.	morningflower, konli pahu konli'awo, konli'awahia little bell, pink bindweed	X I X	UICHTIACEAE (Nettle family) <i>Pilea microphylla</i> (L.) Liehm.	nettle-ivy plant	X
EUPHORBIACEAE (Spurge family) <i>Miconia munita</i> (L.) Mull. Arg. <i>Miconia tomentosa</i> (L.) Mull. Arg. <i>Ricinus communis</i> L.	lingzabing candle tree, koli	X X X	VERBENACEAE (Verbena family) <i>Clerodendrum chinensis</i> (Desf.) Mabb.	pinkie-hohono	X
FABACEAE (Pea family) <i>Canavalia cathartica</i> Thouin <i>Desmodium incanum</i> DC. <i>Desmodium triflorum</i> (L.) DC. <i>Leucena leucoccephala</i> (Lam.) de Wit <i>Mucuna gigantea</i> (Willd.) DC. <i>Nemolonia wightii</i> (Wight & Arn.) Lackey <i>Senna alata</i> (L.) Roxb.	manuaha Spanish clover, ka'imi three-flowered buggerweed kon holo, e'kon seabean, ka'e'e candle bush	X X X I X X	MONOCOTS		
LAMIACEAE (Mint family) <i>Hypolepis pectinata</i> (L.) Poit.	comb hyptis	X	AGAVACEAE (Agave family) <i>Cordyline terminalis</i> (L.) A. Chev.	ti, ki	P
LAURACEAE (Laurel family) <i>Persea americana</i> Mill.	avocado, alligator pear	X	ARACACEAE (Armid family) <i>Alocasia macrorrhiza</i> (L.) Schott <i>Epipremnum pinnatum</i> (L.) Engl.	'ape taro vine, pothos, kalien pothos	P X
			ARECACEAE (Palm family) <i>Cocos nucifera</i> L.	coconut, niu	P
			COMMELINACEAE (Spiderwort family) <i>Commelina diffusa</i> N.L. Burm.	honohono	X

Scientific name	Common name	Status
CYPERACEAE (Sedge family)		
<i>Cyperus alternifolius</i> ssp. <i>flabelliformis</i> (Rottb.) Kukenth.	umbrella plant, 'ahu 'awe haole, pu'uka'a haole green kyllinga, kilito'opu	X X
<i>Kyllinga brevifolia</i> Rottb.		X
<i>Kyllinga nemoralis</i> (J.R. Forster & G. Forster) Dandy ex Hutchinsonson & Dalziel	white kyllinga, kilito'opu	I
<i>Pycneus polystachyos</i> (Rottb.) P. Beauv.		
MUSACEAE (Banana family)		
<i>Musa X paradisiaca</i> L.	banana, ma'ia	X
PANDANACEAE (Hale family)		
<i>Pandanus tectorius</i> S. Parkinson ex Z	pandanus, hale, pu hale	I
POACEAE (Grass family)		
<i>Brachiaria mutica</i> (Forsk.) Stapf	California grass, Para grass	X
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass, manienie crabgrass	X X
<i>Digitaria</i> sp.	wiregrass, manienie ali'i	X X
<i>Eleusine indica</i> (L.) Gaertn.		X
<i>Eragrostis pectinacea</i> (Michx.) Nees		X
<i>Paspalum conjugatum</i> Bergius	lilo grass, mau'u lilo	X X
<i>Paspalum vaginatum</i> Sw.	seashore paspalum	X X
<i>Setaria palmifolia</i> (J. Koenig.) Stapf	palmgrass	X X
<i>Sporobolus diander</i> (Retz.) P. Beauv.	Indian thropesed	X X

Appendix D

**BOTANICAL SURVEY
KAWAIHAE HARBOR**

**Winona P. Char
Char & Associates, Inc.**

October 2000

**BOTANICAL SURVEY
KAWAIHAE HARBOR**

SOUTH KOHALA DISTRICT, HAWAII

**BOTANICAL SURVEY
KAWAIHAE HARBOR**

SOUTH KOHALA DISTRICT, HAWAII

INTRODUCTION

The project site is located on the southern portion of the Kawaihae Harbor facilities on the area planned for the liquid bulk terminals. The majority of the site is disturbed and consists of fill land; coral dredged from the harbor was used for the fill and is also stockpiled on the site. The remainder of the site supports kiawe forest on Kawaihae extremely stony very fine sandy loam soils.

by

Winona P. Char

CHAR & ASSOCIATES

Botanical Consultants
Honolulu, Hawaii

Field studies to assess the botanical resources on the project site were conducted on 19 September 2000 by a team of two botanists. The primary objectives of the survey were to:

- 1) provide a general description of the vegetation on the site;
- 2) inventory the flora;
- 3) search for threatened and endangered species as well as species of concern; and
- 4) identify areas of potential environmental problems or concerns and propose appropriate mitigation measures.

Prepared for: **R.M. TOWILL CORPORATION**

SURVEY METHODS

Prior to undertaking the field studies, site maps and a colored aerial photograph were examined to determine vegetation cover patterns, terrain characteristics, access, boundaries, and reference points.

October 2000

A walk-through survey method was used. Notes were made on plant associations and distribution, substrate types, disturbances, drainage, topography, exposure, etc. Plant identifications were made in the field; plants which could not be positively identified were collected for later determination in the herbarium, and for comparison with the recent taxonomic literature. The less disturbed kiawe forest area between the fill/stockpile area and the highway was more intensively surveyed as this portion of the property was more likely to harbor native plant communities and, perhaps, rare plants.

The species recorded are indicative of the season ("rainy" vs. "dry") and the environmental conditions at the time of the survey. A survey taken at a different time of the year and under varying environmental conditions would no doubt yield slight variations in the species list, especially of the weedy, annual plants.

DESCRIPTION OF THE VEGETATION

Two vegetation types are recognized on the project site. Ruderal or weedy, wayside vegetation covers the disturbed portions of the property, while kiawe forest occurs on the undisturbed areas. A list of all the plants inventoried within the two vegetation types is presented in the plant checklist at the end of the report.

Ruderal Vegetation

Ruderal or weedy, wayside vegetation occurs on the disturbed area covered by coral fill. Piles of coral as well as boulders, soil, concrete pilings, etc., are stockpiled on this portion of the study area. Much of the site is barren with vegetation cover 5 to

20% in most places. Closer to the edges of the disturbed area where it adjoins patches of kiawe trees, the weedy cover is 40 to 50%.

Atriplex cardleyae, an introduced saltbush from Australia, and buffelgrass (*Cenchrus ciliaris*), native to Africa and tropical Asia, are the most abundant plants. Other plants occurring here in scattered mats include swollen fingergrass (*Chloris barbata*), Australian saltbush (*Atriplex semibaccata*), fountain grass (*Pennisetum setaceum*), *Sporobolus piiferus*, sourbush (*Pluchea carolinensis*), and three native species: 'akulikuli (*Sesuvium portulacastrum*), 'Ilima (*Side fallax*), and 'uhaloa (*Waltheria indica*). Scattered here and there are small stands of kiawe trees (*Prosopis pallida*), 12 to 20 feet tall.

Kiawe Forest

Kiawe forest is found between the fill/stockpile area and the highway. The tree canopy cover is closed in most places, that is, the branches of the trees overlap and cover is 60% or more. The trees are occasionally cut for firewood as evidenced by old stumps and cut branches scattered here and there.

The ground cover is largely leaf and branch litter with scattered clumps of buffelgrass, 1 to 3 feet tall. Other plants found under the kiawe trees include hairy merremia vine (*Merremia aegyptia*), 'aheahoa (*Chenopodium murale*), and hairy abutilon (*Abutilon grandifolium*). Where the canopy is more open as along the edge of the forest, plants of fountain grass, slender mimosa (*Desmanthus virgatus*), running pop (*Passiflora foetida*), Natal redtop grass (*Melinis repens*), and coat buttons (*Tridax procumbens*) are found.

Where the property adjoins the Mailekini Heiau parcel, there is a small stream with kaluha sedge (*Bolboschoenus maritimus*) and seashore paspalum (*Paspalum vaginatum*), but this is outside of project site.

DISCUSSION AND RECOMMENDATIONS

The fill/stockpile area is proposed for development. The vegetation on this heavily disturbed area is composed of a weedy mixture of species, primarily the introduced buffelgrass and *Atriplex canescens* with scattered patches of kiawe. The undisturbed portion of the property, between the fill/stockpile area and the highway, supports kiawe forest; no development is planned for this area.

Only 22 plant species were inventoried on the site. Of these, 17 (77%) are introduced or alien species; one (5%) is originally of Polynesian introduction; and four (18%) are native. All of the native plants are indigenous, that is, native to Hawaii and elsewhere. These are the 'akulikuli (*Scaevola portulacastrum*), 'ilima (*Sida fallax*), milo (*Thespesia populnea*), and 'uhaloa (*Waltheria indica*). No endemic species, i.e. native only to Hawaii, were encountered. None of the plants is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife Service 1999). All of the plants can be found in similar lowland, dry, disturbed habitats.

Given the findings above, the proposed use of the site is not expected to have a significant negative impact on the botanical resources.

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- Evenhuis, N.L. and L.C. Eldredge, editors. 1999. Records of the Hawaii Biological Survey. Bishop Museum Occasional Papers Nos. 58-59.
- U.S. Fish and Wildlife Service. 1999. U.S. Fish and Wildlife Service species list, plants. March 23, 1999. Pacific Islands Ecoregion Office, Honolulu, HI.
- Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1990. Manual of the flowering plants of Hawaii. 2 vols. University of Hawaii Press and Bishop Museum Press, Honolulu, HI. Bishop Museum Special Publication 83.

PLANT SPECIES LIST — Kawaihae Harbor, Hawaii⁴

The following checklist is an inventory of the plants observed during the field studies. The plant names are arranged alphabetically by families within each of two groups: Dicots, and Monocots. The taxonomy and nomenclature of the flowering plants are in accordance with Wagner *et al.* (1990). The few recent name changes for the flowering plants follow those reported in the Hawaii Biological Survey series (Evenhuis and Miller, 1995-1998; Evenhuis and Eldredge, 1999).

For each species, the following information is provided:

1. Scientific name with author citation.
2. Common English and/or Hawaiian name(s), when known.
3. Biogeographic status. The following symbols are used:
 - I = indigenous = native to the Hawaiian Islands and also elsewhere.
 - !? = questionably indigenous = data not clear if dispersal by natural or human-related mechanisms, but weight of evidence suggests probably natural.
 - P = Polynesian introduction = plants originally of Polynesian introduction prior to Western contact, that is, Cook's discovery of the Islands in 1778.
 - X = introduced or alien = all those plants brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western contact (1778).
 - X? = questionably introduced = date of introduction unclear; could possibly be indigenous or perhaps of Polynesian introduction.
4. Presence (+) or absence (-) of a particular species within each of two vegetation types recognized on the study sites (see text for discussion):

r = Ruderal Vegetation
k = Kiawe Forest

Scientific name	Common name	Status	Vegetation Type	
			r	k
FLOWERING PLANTS				
DICOTS				
AIZOACEAE (Fir-marigold family)				
<i>Sesuvium portulacastrum</i> (L.) L.	'akulikuli	I	+	-
ASTERACEAE (Daisy family)				
<i>Emilia fosbergii</i> Nicolson	pualele	X	-	+
<i>Pluchea carolinensis</i> (Jacq.) G. Don	sourbush, pluchea	X	+	-
<i>Tridax procumbens</i> L.	coat buttons	X	-	+
CHENOPODIACEAE (Goosefoot family)				
<i>Atriplex cardleyae</i> Aellen	Australian saltbush 'abeabea	X	+	-
<i>Atriplex semibaccata</i> R. Br.		X	+	+
<i>Chenopodium murale</i> L.		X	-	+
CONVOLVULACEAE (Morning-glory family)				
<i>Merremia aegyptia</i> (L.) Urb.	hairy merremia, koali kua hulu	X?	-	+
FABACEAE (Pea family)				
<i>Desmanthus permambucanus</i> (L.) Thellung	slender mimosa, virgate mimosa koa baole, ekoa	X	+	-
<i>Leucaena leucocephala</i> (Lam.) de Wit		X	-	+
<i>Prosopis pallida</i> (Humb. & Bonpl. Ex Willd.) Kunth	kiawe	X	+	+
MALVACEAE (Mallow family)				
<i>Abutilon grandifolium</i> (Willd.) Sweet	hairy abutilon, ma'o' 'ilima milo	X	-	+
<i>Sida fallax</i> Walp.		I	+	-
<i>Thespesia populnea</i> (L.) Sol. Ex Correa		I?	-	+
PASSIFLORACEAE (Passion flower family)				
<i>Passiflora foetida</i> L.	running pop, pohapoha	X	-	+
STERCULIACEAE (Cacao family)				
<i>Waltheria indica</i> L.	'uhaloa, hi'aloa, kanakaloa	I?	+	+

Scientific name	Common name	Status	Vegetation Type	
			r	k
MONOCOTS				
ARECACEAE (Palm family)				
<i>Cocos nucifera</i> L. <i>Cocos nucifera</i> L.	coconut, niu	P	+	-
POACEAE (Grass family)				
<i>Cenchrus ciliaris</i> L.	buffelgrass	X	+	+
<i>Chloris barbata</i> (L.) Sw.	swollen fingergrass, mau'uiei	X	+	-
<i>Melinis repens</i> (Willd.) Zizka	Natal redtop grass, Natal grass	X	-	+
<i>Pennisetum setaceum</i> (Forsk.) Chiov.	fountain grass	X	+	+
<i>Sporobolus piliferus</i> (Trin.) Kunth		X	+	-

Appendix E

REVIEW OF WATER QUALITY AND MARINE BIOLOGY

AECOS, Inc.

November 2000
Revised June 2001

Review of Water Quality and Biology in Kawaihae and Hilo Harbors for the Harbors 2020 Master Plan Implementation EIS

June 4, 2007
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Introduction

This report attempts to summarize what is known about water quality and resident biota within the Big Island's two major harbors: Kawaihae Harbor on the west side and Hilo Harbor, within Hilo Bay on the east side (see Figure 1). The purpose of the report is to provide input for an EIS in preparation by R.M. Towill Corp. for implementation of the Harbors 2020 Masterplan for harbors improvements and expansions; that is, to serve as a basis for assessing impacts to water quality and biota of specific harbor projects at Kawaihae and Hilo.

Methods

Although some information does exist for each of the harbors, much of it generated during past environmental assessments, it was decided that additional water quality data, and underwater reconnaissance surveys would be useful in making current our understanding of these harbor environments, particularly in specific locations of planned harbor projects. Water samples were collected and analyzed by AECOS Inc. (Hilo) and AECOS Laboratory of Hawaii (Kawaihae). Sample locations are indicated in Figures 2 and 3. Table 1 is a listing of the analytical methods employed for these samples.

¹ Report prepared for R. M. Towill Corporation for an environmental assessment entitled: " This report will become part of the public record.

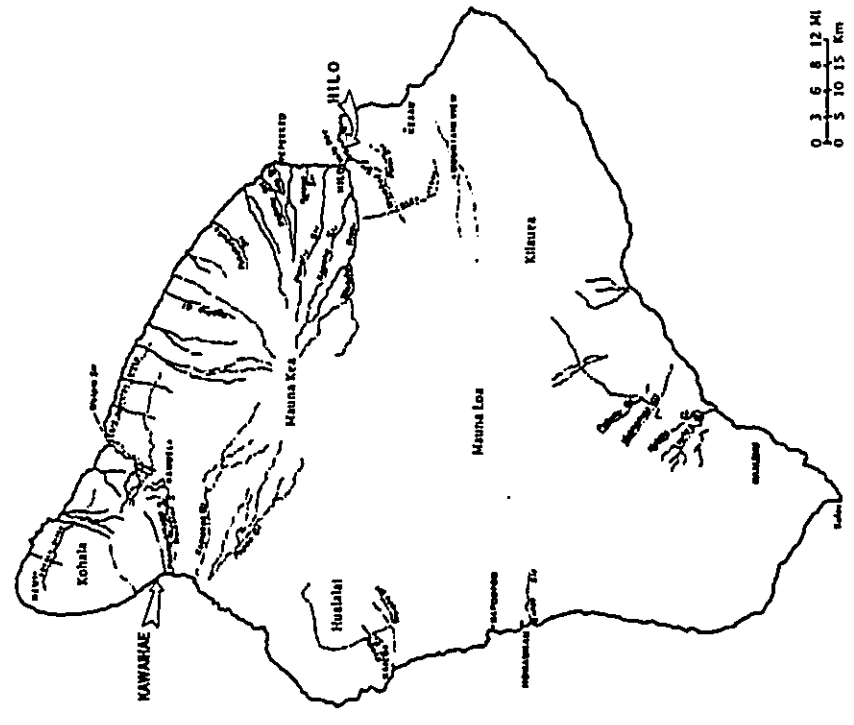


Figure 1. Map of the Big Island of Hawaii showing the locations of Kawaihae and Hilo Harbors.

Water samples from the inner harbor of Hilo Bay were collected on September 24, 2000 at the following station locations: C1 - at channel marker 7 (19° 44.05' N / 155° 3.67' W); P1 - Pier 1 about 50 feet from corner on line from corner to marker (19° 44.04' N / 155° 3.26' W); P2 - 50 feet from P1 in line towards red buoy No. 10 (19° 43.83' N / 155° 3.41' W); P3 - midway along a line from red buoy No. 10 to black buoy near shore (19° 43.76' N / 155° 3.49' W); and R1 - middle of Radio Bay (19° 43.96' N / 155° 3.18' W).

Table 1. Analytical methods and instruments used for the September 2000 sampling in Hilo and Kawaihae harbors, Island of Hawaii

Analytes List	Method	Reference	Instrument
Ammonia	alkaline phenol	Korbell in Grasshoff et al. (1986)	Technon AutoAnalyzer II
Chlorophyll a	Method 1020011	Standard Methods 18th Edition (1992)	Turner Model 112 fluorometer
Dissolved Oxygen	EPA 360.1	EPA (1979)	YSI Model 58 DO meter
Nitrate + Nitrite	EPA 353.2	EPA (1993)	Technon AutoAnalyzer II
pH	EPA 150.1	EPA (1979)	Orion SA 250 pH meter / Ross combination electrode
Temperature	thermistor calibrated in NBS rec. Thermometer (EPA 170.1)	EPA (1979)	YSI Model 58 DO meter
Total Nitrogen	persulfate digestion	D'Elia et al. (1977) / EPA (1993)	Technon AutoAnalyzer II
Total Phosphorus	persulfate digestion / EPA 365.1	Korbell in Grasshoff et al. (1986) / EPA (1993)	Technon AutoAnalyzer II
Total Suspended Solids (TSS)	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
Salinity	Beckm salinometer	Grasshoff in Grasshoff et al. (1986)	AGE Model 2100

D'Elia, C.F., P.A. Sennler, & N. Corwin. 1977. *Limnol. Oceanogr.* 22(4): 764-764.

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Grasshoff, K., M. Ehrhardt, & K. Kremling (eds). 1986. *Methods of Seawater Analysis* (2nd ed). Verlag Chemie, GmbH, Weinheim.

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For this report, the interior perimeter and existing piers of Kawaihae Harbor (Figure 2) were surveyed by a biologist on September 16 and 17, 2000. Using SCUBA, an investigator familiar with the benthos found in Hawaiian harbors and on coral reefs in Hawaii conducted a series of dives along the harbor wall and piers and down to the design depth of the harbor noting the dominant algae, invertebrates and fishes that were encountered and recording

Figure 2. Kawaihae Harbor showing existing Piers 1 - 2B and proposed Piers 3 - 5

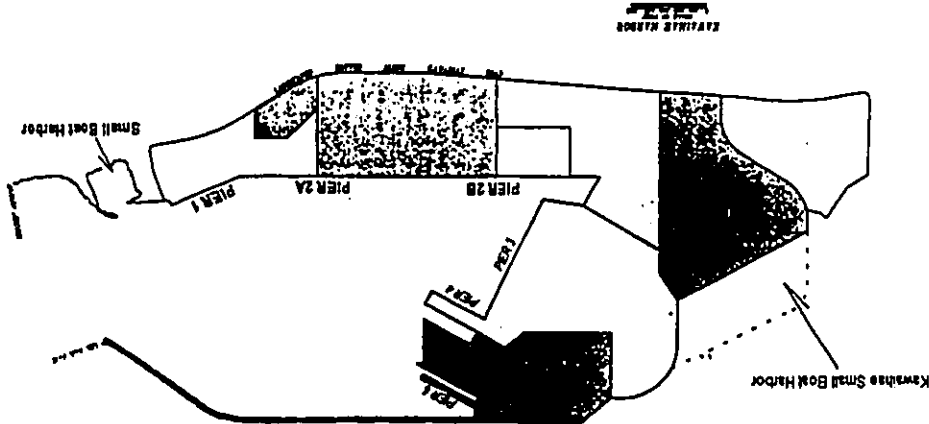
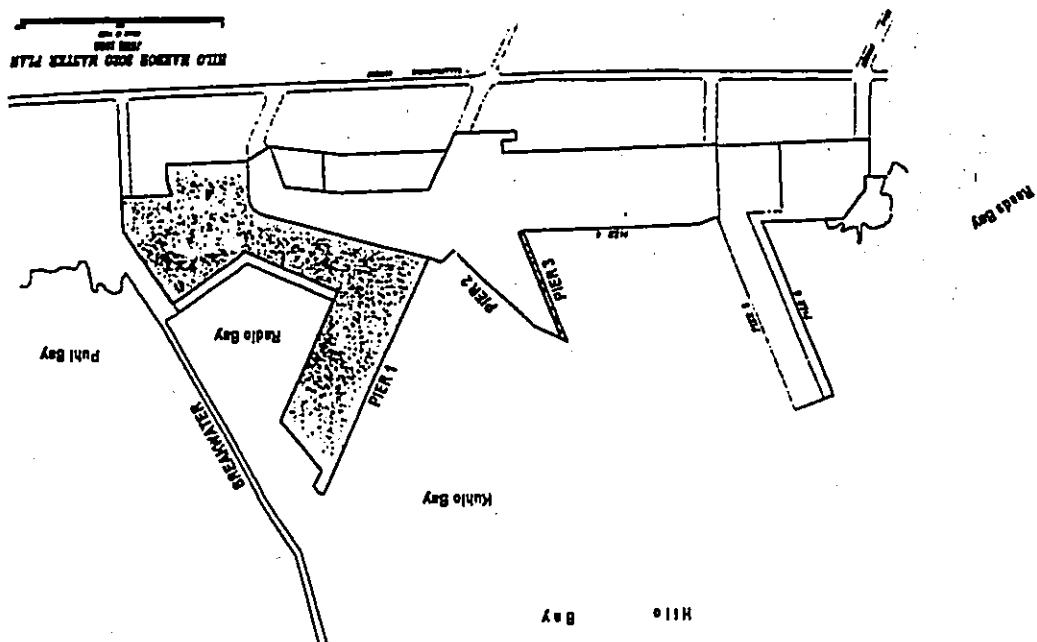


Figure 3. Hilo Harbor showing existing Piers 1 - 3 and proposed Piers 4 - 6.



their identities on underwater paper. For organisms requiring closer inspection to determine their identification, samples were taken, stored in a cooler and held frozen until they could be inspected under a dissecting microscope.

Sections of Hilo Harbor (Figure 3) were surveyed on September 23, 2000 by the same investigator using the methodology as described above for Kawaihae Harbor. Areas surveyed were: 1) the southeast pier wall and shallow area along the northeast jetty of the small harbor called Radio Bay; 2) from the boulder reinforced shoreline at the east end of Pier 3 along the undeveloped shoreline proposed for Pier 4; 3) the offshore area along the proposed Pier 5-6 alignment; and 4) the pilings at the end of Piers 2-3, where dolphins are proposed to be constructed.

Kawaihae Harbor

Kawaihae Harbor lies about 17 miles south of Upolu Point, the northwest tip of the island of Hawaii (Figure 1). It is a commercial, deep-water harbor bounded by a stone revetment on the ocean side, with a long entrance channel passing through the reef flat offshore. Kawaihae Harbor was constructed in 1959 by dredging out a portion of the coral reef offshore and constructing a revetment of basalt boulders on the harbor's seaward side (ORCA/Cheney 1981). Prior to this, a small boat harbor and wharf existed on the site. In 1969-70, a small boat harbor was added on the south side of the harbor jetty seaward of the revetment. This small craft harbor was modified in 1995, and an attempt made to moderate the environmental impact of revetment construction by transplanting corals that would have been eliminated by the project (Jokiel et al., 1999). The commercial harbor's basin was expanded through additional dredging in 1972.

The constructed surfaces within the Kawaihae Harbor are large basalt boulders that form the jetty or concrete or metal sheet piling bulkheads which form the docks. The eastern side of the harbor is a wide beach shoreline formed by the tailings from the dredging of the harbor from the original coral reef. Natural beaches occur outside the harbor on the seaward side of the small boat harbor, inside Pu'u Kohala Bay and at Spenser Beach Park.

Along with the commercial port operations conducted in Kawaihae Harbor, it is used for a number of other water related activities, including mooring of fishing and sailing boats along the east side of the harbor, a public boat launching ramp adjacent to the harbor entrance, and canoe racing practices conducted within the calm water of the harbor.

Water Quality

Kawaihae Harbor is located in a low rainfall area with an average annual rainfall of 16.33 inches (NCDC, 2000). There are no major surface fresh water discharges into the harbor. Fresh water runoff from Makenaha Gulch (AECOS Consultants, 2000), behind the harbor may occur during storm events, but this water apparently enters the marine environment behind the breakwater of the small boat harbor, and does not flow directly in Kawaihae Harbor (Woolsey, Miyahara, & Assoc., 1985).

Kawaihae Harbor is categorized as a Class A embayment by the State Department of Health (HAR §11-54-06; DOH, 1992) and is subject to the State's "dry" embayment water quality criteria (Table 2). "dry" criteria apply to embayments where the average daily fresh water inflow from the land is less than one percent of the embayment volume.

Table 2. State of Hawaii "dry" water quality criteria for embayments (HAR §11-54-06)(DOH, 1992).

Parameter	Geometric Mean value not to exceed	Value not to be exceeded more than 10% of the time	Value not to be exceeded more than 2% of the time
Total Nitrogen (ug N/l)	150.0	250.0	350.0
Ammonia (ug N/l)	3.5	8.5	15.0
Nitrate + Nitrite (ug N/l)	5.0	14.0	25.0
Total Phosphorus (ug P/l)	20.0	40.0	60.0
Chlorophyll <i>a</i> (ug/l)	0.50	1.50	3.00
Turbidity (ntu)	0.4	1.0	1.5

Other "standards":

- pH units shall not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, storm drain or groundwater discharge may depress the pH to a minimum level of 7.0.
- Dissolved oxygen shall not decrease below 75% saturation.
- Temperatures shall not vary more than 1 C° from ambient conditions.
- Salinity shall not vary more than 10‰ from natural or seasonal changes considering hydrologic input and oceanographic factors.

There is little vertical stratification in salinity/temperature in Kawaihae Harbor based on data collected by Oceanic Institute (1991) on March 26, 1991 (Table 3), indicating that there is little groundwater input, or surface runoff into this basin. Virtually all of the waters within the harbor are chemically and physically similar to the oceanic waters outside, with mean temperatures ranging from 24.73 to 25.45 C and salinities from 34.63 to 34.73 ‰. Surface waters in the harbor at Kawaihae are slightly warmer than the deeper waters due to solar

heating during the day. Mean DO levels ranged from 6.35 to 6.54 mg/l, with the highest levels in the upper 5 meters of the water column.

Nitrogen and phosphorus levels were low during the March 2, 1991 sampling and well below State water quality criteria (see Table 3). Interestingly, nitrate + nitrite levels were lower inside the harbor than outside the harbor.

Consistent with the low nutrient concentrations observed at Kawaihae, chlorophyll levels were below 0.50 ug/l throughout the harbor on this date. Average chlorophyll levels inside the harbor (Table 3) were slightly higher than those outside, probably due to increased residence time within the harbor as compared with adjacent coastal waters. The slightly higher chlorophyll concentrations and residence times may account for the slightly lower nitrate + nitrite nitrogen levels within the harbor noted above, these nitrogen moieties being removed from the water column by algal metabolism.

Table 3. Mean water quality conditions at Kawaihae Harbor area on March 26, 1991 (after OI, 1991)

Harbor	Temp (°C)	Salinity (‰)	DO (mg/l)	DO (% sat)	Turbidity (ntu)	NO ₃ + NO ₂ (ug/l)	NH ₄ (ug/l)	TN (ug/l)	TP (ug/l)	Chl. <i>a</i> (ug/l)
surface	25.45	34.63	6.35	95	0.51	3	2	43	10	0.13
5 meters	24.87	34.73	6.53	96	0.80	1	3	41	11	0.14
10 meters	24.68	34.73	6.49	97	1.23	1	1	42	12	0.30
mean	24.99	34.70	6.46	96	0.85	2	2	42	11	0.19
Coast										
surface	25.23	34.67	6.54	97	0.39	4	1	38	10	0.14
5 meters	24.97	34.70	6.50	96	0.40	4	1	35	9	0.11
10 meters	24.73	34.72	6.42	95	0.38	3	1	35	10	0.13
mean	25.00	34.70	6.49	95	0.39	4	1	36	10	0.13

Crystallinity indicates that mean (or geometric mean) values of State water quality criteria were exceeded.

Mean values for samples collected in the surface waters in the Kawaihae Harbor area on September 17 and 29, 1999 are shown in Table 4. In comparison with the OI data above, DO saturation levels and turbidity levels were somewhat lower in September 1999, while TN, TP and chlorophyll *a* concentrations were notably higher. The TN and TP levels for the 1991 may have been filtered prior to analysis and would therefore represent just the dissolved fractions of nitrogen and phosphorus.

Table 4. Mean water quality conditions in the surface waters at Kawaihae Harbor on September 17 and 29, 1999

Temp (°C)	Salinity (‰)	DO (mg/l)	DO (% sat)	Turbidity (ntu)	NO ₃ ⁻ (µg/l)	NO ₂ ⁻ (µg/l)	NH ₄ ⁺ (µg/l)	TN (µg/l)	TP (µg/l)	CN (µg/l)
26.2	34.37	5.66	85	0.29	<1	2	130	17	0.52	
26.4	34.35	5.84	88	0.31	1	1	130	15	0.34	

A comparison of water quality conditions in Kawaihae Harbor (Tables 3 and 4) with the State water quality criteria as shown in Table 2 suggests that the harbor is generally in conformance with all criteria; a possible exception is turbidity. The progressive increase in turbidity with depth that is apparent in the March 1991 data, suggests that sediment has accumulated in significant amounts on the harbor floor over the years. Periods of turbulence, such as high wind conditions or the movement of large vessels into and out of the harbor, may increase turbidity levels throughout the water column, as noted by the divers on September 16 (see "Pier 1" below). Since turbidity levels were well within the State criteria during the September 1999 sampling events, further monitoring would be required to determine whether long-term mean levels exceeded the State criteria.

It is noteworthy that water quality conditions within and outside of the harbor are quite similar, indicating that water quality within the harbor are generally quite good. The lack of significant surface water discharge and groundwater inputs along this section of the coast are the primary reasons for the generally pristine water quality conditions in this harbor.

Biota

A limited amount of biological information is available for the marine environment of the boat harbor and surrounding area (U. S. Army Corps of Engineers, 1971, 1975; Brock and Brock 1974; Hawaii Department of Land and Natural Resources, 1974; Hawaii Electric Light Co. Inc., 1976; Ball 1977; Cheney et al 1977; ORCA 1978; OI Consultants, Inc. 1991; Marine Research Consultants 1995). Most of these surveys were summarized in ORCA/Cheney (1981) with an annotated bibliography of all environmental studies conducted in the Kawaihae area along with a general description of the Kawaihae marine environment. The only previous studies of conditions within the harbor itself are given in ORCA (1978) and Hawaii Electric Light Inc. (1976). A transect established in the latter study just inside the harbor on the reef remnant

beside the breakwater found a total coral cover of 32% composed of 11 hard coral and one soft coral species, as well as the presence of five echinoderm and one serpulid species.

The taxa of organisms recorded on the harbor survey are shown in Table 5 along with totals of invertebrates and fishes for portions of the harbor corresponding to prospective Piers 1, 2a, 3 and 4, the existing Pier (designated here as 2b) and the reef remnant at the end of the jetty adjacent to the harbor entrance (Figure 2). A total of 116 organisms were identified on the underwater surveys, composed of 56 species of invertebrates, 59 species of fish, and one reptile: the green sea turtle, *Chelonia mydas*.

Pier 1 Site

This area includes the piers planned for the Dry Bulk Terminals and includes existing piers for about half of its distance (Figure 2). Starting adjacent to the entrance of small boat harbor, the existing shoreline consists of large lava boulders, with coral growing on the rocks right up to the water line. Below this point, the bottom extends from about 1.5 m (5 ft) depth to the bottom of the harbor at about 11 m (36 ft). The rock and limestone hard substratum on the bottom supports a high coverage of hermatypic corals of around 50-60% dominated by *Pocillopora labia*, *Pocillopora meandrina* and *Pocillopora compressa*. This coverage by live corals occurs down to about 8 m (26 ft) depth, below which coral heads are more widely scattered. The overall appearance is that of a pristine coral community. At the time of the initial survey on September 16, 2000 water clarity was high, but clarity was substantially lower on the following day because of a swell outside the harbor entrance which stirred up bottom sediments.

Approximately halfway along the zone indicated for Pier 1 (Figure 2) the existing pier for the main dock area of the harbor begins, and this pier extends along most of the north side of the harbor. The community more typical of open coastal environments ends abruptly at the beginning of this pier, and the bottom substratum is coarse sand and coral rubble, with filamentous brown algae and silt, extending from depths of about 7 m (23 ft) right by the pier to the harbor depth of 11 m (36 ft). Little live coral or other macrobiota occurs on the bottom, but coral coverage is high on the metal sheet piling that forms the harbor wall along the pier. Fishes, which were abundant over the coral bottom further west, were noticeably fewer here in both species and abundance. This condition pertains until the southeast end of Pier 1 is

Table 5. Organisms recorded on survey of Kawaihae Harbor, September 16-17, 2000

Taxa 1	Taxa 2	Genus Species	Author, Date	Pier 1	Pier 2a	Pier 2b	Pier 3	Pier 5	Jetty
Rhodophyta	Corallinaceae	<i>Hydroclathrus reinboldii</i>	(Webb-van Bosse & Foster) Foster (Hyndrich) Foster						x
		<i>Pocillopora ankodes</i>	Ridley, 1884						x
Porifera	Callyspongiidae	<i>Callyspongia diffusa</i>	Schmidt, 1852						
	Microcloniidae	<i>Cialinia sp.</i>	(de Laubenfels, 1950) de Laubenfels, 1950						
	Dysideidae	<i>Dysidea cf. avara</i>	Ridley, 1884						
	Myxillidae	<i>Horochia protea</i>	Godthrus, 1820						
	Spirastrellidae	<i>Spirastrella vagabunda</i>	Dana, 1852						
Hydrozoa	Pennariidae	<i>Pennaria discicha</i>	Hume, 1860						
Anitrozoa	Pocilloporidae	<i>Pocillopora meandrina</i>	(Linnæus, 1758) Dana, 1846						
	Pocilloporidae	<i>Pocillopora eydouxii</i>	Verrill, 1864						
	Pocilloporidae	<i>Pocillopora damicornis</i>	(Linnæus, 1758) Dana, 1846						
	Acroporidae	<i>Montipora capitata</i>	Dana, 1846						
	Poritidae	<i>Porites compressa</i>	Dana, 1846						
		<i>Porites lobata</i>	Vaughan, 1907						
		<i>Porites avarmanni</i>	Verrill, 1864						
	Agariciidae	<i>Parona varians</i>	Lamarck, 1801						
	Fungiidae	<i>Fungia scutaria</i>	(Dana, 1846) Dana, 1846						
	Faviidae	<i>Cyprastrea ocellina</i>	Dana, 1846						
	Fa	<i>Lepidastrea purpurina</i>	Dana, 1846						
	Aniphalidae	<i>Cirripathes anguina</i>	Dana, 1846						
Polychaeta	Amphionidae	<i>Eurythoe complanata</i>	(Pallas, 1766)						
	Chaetopteridae	<i>Chaetopterus sp.</i>	(Claparède, 1870)						
		<i>Mesochaetopterus cf. sagittarius</i>	(Savigny, 1818)						
	Terebellidae	<i>Loricaria medusa</i>	(Grube, 1878)						
	Sabellidae	<i>Sabellastarte</i>	(Huxley, 1855)						
	Serpulidae	<i>Speleobrycones gyanicus</i>	(Pallas, 1776)						
Crustacea	Cirripedia	<i>Balanus reticulatus</i>	Unonik, 1950						
		<i>Chthamalus proteus</i>	Dando & Southward, 1980						
	Stenopodidae	<i>Stenopus hispidus</i>	Rathbun, 1907						
	Grapsidae	<i>Grapsus tenuicrustatus</i>	(Herbst, 1783)						
		<i>Nerita picea</i>	(Rachis, 1841)						
		<i>Charonia tritonis</i>	(Linn., 1758)						
	Littorinidae	<i>Littoraria pinnata</i>	(Wood, 1828)						
	Veneridae	<i>Evaluales tulipa</i>	(Chenu, 1843)						
	Cypraeidae	<i>Cypraea caputserpentis</i>	Linnæus						
		<i>Cypraea chinensis</i>	Gmelin, 1791						
	Hippidae	<i>Hipporia sp.</i>	(Ruppell & Leuclant, 1826)						
Opisthobranchia	Chromodorididae	<i>Hypselodoris inturcata</i>							

Table 5 (continued).

Taxa 1	Taxa 2	Genus Species	Author, Date	Pier 1	Pier 2a	Pier 2b	Pier 3	Pier 5	Jetty
Bivalvia	Ostreae	<i>Crassostrea gigas</i>	(Thunberg, 1793)						
		<i>Dendostrea sandvicensis</i>	Sowerby, 1871						
	Spondyliidae	<i>Spondylus violaceosens</i>	Lamarck, 1819						
Cephalopoda	Octopodidae	<i>Octopus cyanea</i>	Gray, 1849						
Ectoprocta	Vesiculariidae	<i>Amathia distans</i>	Buck, 1886						
Ectoprocta	Diaperocidae	<i>Diaperocia intricata</i>							
Echinodermata	Diadematae	<i>Diadema paucispinum</i>	Agassiz, 1863						
		<i>Echinolirix diadema</i>	Linnæus, 1758						
		<i>Echinolirix calmaris</i>	(Pallas, 1774)						
		<i>Tripanosites graillia</i>	(Linnæus, 1758)						
	Toxopneustidae	<i>Echinometra mathiaei</i>	(Blainville, 1825)						
	Echinometridae	<i>Echinostrophus aculeatus</i>	A. Agassiz, 1863						
		<i>Heterocentrotus mammillatus</i>	Linnæus, 1758						
		<i>Actinopyga mauritiana</i>	(Quoy & Gaimard, 1833)						
Urochordata	Holothuridae	<i>Didemnum sp.</i>							
	(Ascidiacea)	<i>Heterometra momus</i>	(Savigny, 1818)						
	Total Invertebrate Taxa			31	26	13	25	19	
Osteichthyes	Synodontidae	<i>Saurida flammia</i>	Wheeler, 1962						
	Balonidae	<i>Polyodon argalius</i>	(Bennett, 1832)						
	Holocentridae	<i>Sargocentron sp.</i>	(Linnæus, 1766)						
	Aulostomidae	<i>Fistularia commersonii</i>	Ruppell, 1838						
	Fistulariidae	<i>Paracirrhites forsteri</i>	(Bloch & Schneider, 1801)						
	Cirrihiidae	<i>Paracirrhites arcalus</i>	(Cuvier, 1829)						
		<i>Kuhlia sandvicensis</i>	(Steudacher, 1878)						
	Kuhliidae	<i>Caranx melampygus</i>	Cuvier and Valenciennes, 1833						
	Carangidae	<i>Caranx sarfacilius</i>	Quoy and Gaimard, 1824						
		<i>Lufjanus fulvus</i>	(Quoy and Gaimard, 1824)						
	Lutjanidae	<i>Lufjanus kasumba</i>	(Forskal, 1775)						
		<i>Mulloidichthys flavolineatus</i>	(Lacepède, 1801)						
		<i>Mulloidichthys vanicolensis</i>	(Valenciennes, 1831)						
		<i>Parupeneus multifasciatus</i>	Quoy & Gaimard, 1824						
		<i>Parupeneus porphyreus</i>	Jenyns, 1903						
		<i>Kyphosus bigibbus</i>	Lacepède, 1802						
	Kyphosidae	<i>Chaetodon quadrimaculatus</i>	Gray, 1833						
		<i>Chaetodon auriga</i>	Forskal, 1775						
		<i>Chaetodon fremblif</i>	Bennett, 1829						
		<i>Chaetodon lunula</i>	(Lacepède, 1803)						
		<i>Chaetodon militar</i>	Quoy & Gaimard, 1828						
		<i>C.omalissimus</i>	Cuvier 1831						
		<i>C.quadrimaculatus</i>	Gray, 1833						
		<i>Chaetodon reificulatus</i>	Cuvier, 1831						

Table 5 (continued).

Taxa 1	Taxa 2	Genus Species	Author, Date	Pier 1	Pier 2a	Pier 2b	Pier 3-5	Jetty
	Chaetodontidae	<i>Forcipiger flavissimus</i>	Jordan and McGowan, 1896	x			x	x
	Pomacentridae	<i>Abudefduf vaigiensis</i>	(Quoy & Gaimard, 1824)		x			x
		<i>Abudefduf abdominalis</i>	Randall, 1824		x			x
		<i>Chromis hanui</i>	Snyder, 1973 and Gil, 1963					x
		<i>Dascyllus albisella</i>	Valant and Savage, 1975	x	x	x	x	x
		<i>Plectroglyphidodon johnstonianus</i>	(Ogby, 1859)					x
Serranidae		<i>Stegastes fasciatus</i>	Boch & Schneider, 1901					x
		<i>Cephalopholis argus</i>	(Valenciennes, 1839)					x
		<i>Bodianus bilunulatus</i>	Linnaeus, 1758					x
		<i>Gomphos varius</i>	Linnaeus, 1758					x
		<i>Labroides phillipphagus</i>	Randall, 1960					x
		<i>Thalassoma duperrey</i>	(Quoy and Gaimard, 1824)	x	x	x	x	x
		<i>Scarus sp. (juv.)</i>						x
		<i>Acanthurus nigrofasciatus</i>	(Forstal, 1775)					x
		<i>Acanthurus triostegus</i>	(Linnaeus, 1758)					x
		<i>Acanthurus nigrofuscus</i>	(Valenciennes, 1835)					x
		<i>Acanthurus blochii</i>	(Valenciennes, 1835)					x
		<i>Acanthurus achilles</i>	Shaw, 1803					x
		<i>Acanthurus olivaceus</i>	Boch & Schneider, 1901					x
		<i>Acanthurus dussumieri</i>	Cuvier					x
		<i>A. leucopareus</i>	(Valenciennes, 1835)					x
		<i>Ctenochaetus strigosus</i>	(Jenkins, 1903)					x
		<i>Naso lateralis</i>	(Bennet, 1828)					x
		<i>Naso brevirostris</i>	(Boch & Schneider, 1901)					x
		<i>Zebrafascia flavescens</i>	(Valenciennes, 1835)					x
		<i>Zanclus cornutus</i>	(Bennet, 1828)					x
		<i>Ostracion meleagris</i>	(Linnaeus, 1758)					x
		<i>Arothron hispidus</i>	(Shaw and Nodder, 1796)					x
		<i>Canthigaster jactator</i>	(Linnaeus, 1758)					x
		<i>Diodon holocanthus</i>	(Jenkins, 1901)					x
		<i>Melichthys viqua</i>	(Linnaeus, 1758)					x
		<i>Rhinocanthus aculeatus</i>	(Solander, 1844)					x
		<i>Sufflamen bursa</i>	(Boch, 1786)					x
			(Linnaeus, 1758)					x
			(Boch & Schneider, 1901)					x
			Total Fish Taxa	29	14	20	34	35
Reptilia	Chelonidae	<i>Chelonia mtdas</i>						
			Total Taxa	60	41	33	58	55

1 - Species thought to be introduced (alien to Hawaiian Islands); All others are considered to be native species, with those in bold representing the endemics (found only in the Hawaiian Islands).

reached, where coral on the bottom increases to about 30% coverage and fishes again become moderately abundant.

A total of 60 organisms were recorded along Pier 1, which included 31 invertebrates dominated by corals and echinoderms, and 29 species of fish. This was the highest number of invertebrates and total organisms observed on of the five areas surveyed at Kawaihae, and all were sighted along the relatively short section of coral bottom corresponding to the area proposed for Pier 1.

Pier 2a

This is the main pier area for the harbor, and it consists of concrete pier pilings about 0.6 m (2 ft) in cross section that extends from the surface down to the harbor bottom at 11 m (36 ft) depth. The deck of the pier is supported by these piers, and the sheet piling wall of the pier is recessed about 10 m from the pier's edge, forming a large area underwater which is dimly lit where the bottom slopes gradually up to the pier wall. The bottom substratum under the pier is coarse sand and the water tends to be turbid. These factors have prevented settlement and growth of corals under the pier, although the corals *Montipora capitata* and *Porites lobata* are common on the pier pilings near the edge of the pier where light is sufficient to support them. *M. capitata* colonies on the pier pilings are sometimes quite large, reaching 0.5 m (1.6 ft) in greatest dimension.

Going southeastward along the pier toward the head of the harbor, the dominant biota on the pier pilings changes from open-coastal type organism to those more commonly found in Hawaiian harbors, such as polychaetes, tunicates, and especially bryozoans. Numbers of invertebrates decreased from the 31 species found along the relatively short distance of prospective Pier 1 to only 13 along the entirety of Pier 2a (Table 5). A similar reduction occurred in the numbers of fish species sighted, from 60 at Pier 1 to 30 along Pier 2a, resulting in a total number of only 60 taxa observed along the entirety of Pier 2a.

Pier 2b Site

This area is designated for future expansion as a passenger terminal, research station and/or cargo expansion area. At present it is composed of wooden docks at the east end of Pier 2 that are being used to moor sailboats and other pleasure craft. The docks lie outside lava boulders used to surface the limestone substratum, which extends to 7 m (23 ft) depth at the shoreline. Hermatypic corals are more abundant here than along Pier 2a. Live coral coverage as high as 30% occurs near the surface, decreasing with depth down to a limit at about 5 m (16 ft), with most of the coral and fishes occurring near the surface at less than 2 m (6 ft) depth. The decreasing numbers of species observed along the length of Pier 2a in the southeasterly direction essentially continues here, with only 13 invertebrates and 20 fishes recorded (Table 5), for a total of 33 species in this small area near the head of the harbor. This location also had the highest water turbidity of any area on the survey, which may in part be a factor in the

low number of organisms observed, especially for the fishes. That is, fishes were decidedly more difficult to observe and identify in the water.

Piers 3-5 (proposed) Site

The Piers 3-5 Site extends along the southern shoreline of the harbor to the jetty that protects the harbor on its seaward side. Planned usage is for an inter-island cargo area (Pier 3) along most of the existing shoreline and a military cargo area (Pier 4) on the seaward 100 m (300 plus feet), with a small pier (Pier 5) at the beginning of the jetty on the seaward side of the existing LST/LCU ramp.

At present the shoreline along the southeast side of the harbor is a beach area that was formed from dredge tailings material when the present harbor was formed. Although the beach is not particularly attractive and is composed of packed sediment and cobbles, it is apparently quite popular with the public for recreational use. Approximately 30 people were observed to use the area each day on September 16 and 17 when our survey was conducted. This popularity is apparently due in part to many small tide pools and quiet swimming areas behind rocks dredged up in harbor construction that are used by families with small children.

It has been pointed out (Momi Subiono, pers. comm.) that this beach area is used for collecting small mollusk (called micromollusk) shells. The conditions that contribute to favoring deposits of these shells (called a death assemblage by marine biologists) in this area are essentially unknown. For example, it is unclear whether these shells come from populations of small species now extant (living) in the harbor, or populations that lived on the former reef flat that existed here prior to harbor dredging and construction of the breakwater. According to Ms. Subiono, some species are "very rare" and "not found on other beaches along the Kona coast." None, however, is listed as endangered, threatened, proposed, or as a candidate species by the U.S. Fish and Wildlife Service under the Endangered Species Act of 1973 as amended (ESA), or by the State of Hawaii under its endangered species program (State DLNR, 1996; CFR, 1999; Federal Register 1999).

Off the beach and shoreline rocks, the bottom slopes down at about a 30° angle to a coarse sand and rubble bottom at about 5 m (16 ft) depth. Above this depth the substratum is mostly rocky outcrops separated by cobbles and coarse sand which continue up to the shoreline which is composed of lava boulders framing the small tidepools. On the hard substratum at 3 m (6 ft) depth, corals are common, ranging from about 25% coverage near the head of the harbor to about 80% near the west end of the proposed Pier 3. The boulders and outcrops provide substantial vertical relief and habitat for fishes and motile invertebrates. Most of the coral coverage on the hard substratum is *Porites lobata* and *Pocillopora meandrina*, but *Pocillopora daniconis*, *Montipora pitula*, *Porites compressa*, *Lepidastrea purpurea*, *Porites evermanni* and *Parona verrans* were also present. Twenty-five invertebrate species and 34 fish species were recorded along this segment of the survey, for a total of 58 species (Table 5), the second highest total number on the survey. The area is primarily a highly altered reef flat/slope

environment with limited biotic diversity due to distance from the harbor entrance and resulting restrictions on waves and water flow. Near the northeast side of the LST/LCU boat ramp this shallow bottom community broadens to about 50 m (164 ft) width with approximately 80% coral coverage of mostly *Porites compressa* down to about 5 m (16 ft) depth, despite high turbidity and a fair amount of fine sediment on the bottom.

On the other side of the LST/LCU ramp, at the proposed site of Pier 5, are dolphins with concrete legs that provide habitat for different types of organism than occur along the rest of this shoreline, species that would be regarded as more typical of harbor biota. This was the only location where the bryozoans, *Amathia dilatans* and *Diphyridia intricata*, and the ascidian, *Herdmania mamius*, were found. These are dominant organisms in O'ahu harbors, and their presence within Kawaihae harbor suggests that they could become more common if additional concrete substratum were to become available from expanded pier development.

End of Harbor Jetty

This segment of the survey was conducted on the reef remnant from just inside of the end of the harbor jetty around to its seaward face. The reef remnant rises steeply out of the dredged channel from about 13 m (43 ft) to a margin at about 1.5 m (5 ft) depth. Environmental conditions are pristine, with high water clarity and abundant coral coverage of about 75%, marked by large coral heads and high vertical relief. This structure provides substantial habitat and refuge for fishes. Despite the relatively small area surveyed, 55 species were recorded, composed of two calcareous algae, 19 invertebrates and 35 fishes, the highest number found during our survey (Table 5).

Hilo Harbor

Hilo Bay is a broad indentation in the northeastern coastline of the island of Hawaii. The beginnings of the present configuration of Hilo Harbor date to the start of the Hilo breakwater construction in 1908. Originally built of stone quarried from Waiakea and Puna (and later from Waipio Valley), the breakwater was constructed on the inner part of the reef fronting Hilo Bay and was completed in 1929 to its present length of 10,170 ft (3,100 m; Kelley et al., 1981). The pier that was originally called Kulo Wharf was constructed in 1912-16 at the present Pier 1 site, with the harbor bottom near the pier having been dredged at that time to a depth of 35 ft (10 m). Completion of this pier removed most ship loading and unloading activity from the former Railroad Pier and the Government Wharf that had existed near the mouth of Waioa River at Waiakea. Pier 2 was constructed in 1921-23 and Pier 3 in 1926-27. Large areas of the harbor basin were dredged during this period to accommodate approaches to these piers (Kelley et al., 1981).

This construction and modification of this section of Hilo Bay undoubtedly dramatically altered the oceanographic environment, creating a more stagnant water column with high

turbidity levels compared with the formerly relative unrestricted conditions in Hilo Bay. Remarkably, there does not seem to be any studies or reports that describe the biological environment within the confines of Hilo Harbor or any surveys of the organisms that occur there.

Water Quality

The region draining to Hilo Bay is very wet, with an annual rainfall ranging from about 130 to 300 inches (NCDC, 2000). The bay receives surface water runoff from several streams - mostly notably Wailuku Stream. The breakwater constructed in the early 1900's has resulted in increased residence time for waters within its confines. The harbor can be divided into two sections: (1) the inner harbor which is the area bounded by the breakwater, the shoreline and an imaginary line from Coconut Island to the edge of the breakwater; and (2) the outer harbor is that area west of the imaginary line.

The Wailuku River drains a watershed of some 256 square miles and flows into the outer harbor area (USGS, 2000). The average flow of the Wailuku River into Hilo Bay is about 300 mgd (Cox and Gordon, 1970). The flow of fresh basal groundwater to the bay occurs at a nearly constant rate in comparison with surface runoff, which varies with weather conditions, and is often the overwhelmingly dominant freshwater component entering the bay. To the north, between the Wailuku River and Alalea Point (outer harbor), 10 to 20 mgd of groundwater flow issues at the coast, about equivalent to the low flow of the river. In Hilo Harbor east of Wailuku River (inner harbor), the flow is on the order of 500 mgd (M&E Pacific, 1980).

There is a continuous net outflow of the less saline cooler surface layer from the harbor. Discharges to the surface layer will move out of the harbor mouth at a rate dependent upon the freshwater input, the wind speed and direction. There is a net inflow to the harbor in the bottom waters that is dependent on the tide and the rate of mixing with the surface layer. Typical residence times vary from 2.5 to 3.5 days for the surface waters in the outer harbor and from 5.9 to 6.6 days for the inner harbor. In the bottom waters, residence times vary from about 2.1 to 2.4 days for the outer harbor and from 6.7 to 6.9 days for the inner harbor waters (M & E Pacific, 1980).

Hilo Harbor is defined as a Class A embayment by the State Department of Health (HAR §11-54-06, DOI, 1992) and is subject to the State's "wet" embayment water quality criteria (Table 6); "wet" criteria applying to embayments when the average fresh water inflow from the land is greater than one percent of the embayment volume per day.

Table 6. State of Hawaii "wet" water quality criteria for embayments (HAR §11-54-06)(DOH, 1992).

Parameter	Geometric Mean value not to exceed	Value not to be exceeded more than 10% of the time	Value not to be exceeded more than 2% of the time
Total Nitrogen (ug N/l)	200	250.0	350.0
Ammonia (ug N/l)	6	8.5	15.0
Nitrate + Nitrite (ug N/l)	6	14.0	25.0
Total Phosphorus (ug P/l)	25	40.0	60.0
Chlorophyll <i>a</i> (ug/l)	1.50	1.50	3.00
Turbidity (ntu)	1.5	1.0	1.5

- Other standards:
- pH units shall not deviate more than 0.5 units from a value of 8.1, except at coastal locations where and when freshwater from stream, storm drain or groundwater discharge may depress the pH to a minimum level of 7.0.
 - Dissolved oxygen shall not decrease below 75% saturation.
 - Temperature shall not vary more than 1 C° from ambient conditions.
 - Salinity shall not vary more than 10‰ from natural or seasonal changes considering hydrologic input and oceanographic factors.

Vertical stratification of salinity/temperature in Hilo Bay is pronounced (Table 7) and caused by freshwater inflows from both terrestrial surface and groundwater sources. This results in a well-defined surface layer of low salinity water and a denser, more saline, bottom layer. Salinity ranges from about 5 ‰ in the surface waters of the outer harbor during major storm events to about 32 ‰ in the bottom waters outside of the harbor. Water temperatures in the Harbor are relatively cool and there is typically a difference of about 2 C° (3.6 F°) between the cooler surface and warmer bottom layers.

DO levels tend to be relatively high in the surface waters, and typically exceed saturation levels, while average DO levels in the bottom waters are less than saturation levels (Table 7). Mean pH levels are fairly uniform in the inner and outer harbor areas of Hilo Bay. The somewhat reduced pH levels in the surface waters outside the harbor may result from the lower chlorophyll *a* concentrations here; algal photosynthesis causing pH to rise by removing carbon dioxide from the water column. During storm events, pH in the surface waters is notably reduced in both the inner and outer harbor areas.

Table 7. Mean water quality conditions at Hilo Harbor (after M. & E Pacific, 1980; Sunn, Low, Tom & Hara, 1977)

Temp	Salinity	DO	DO	pH	Turbidity	NO ₃ + NO ₂	TN	TP	CN, a
(°C)	(‰)	(mg/l)	(% sat)		(ntu)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
Outside Harbor									
surface	22.8	20.2	8.04	105	6.13	2.32	24	219	41
bottom	24.5	32.0	6.73	97	8.21	0.92	5	158	24
Outer Harbor									
surface	22.5	17.7	8.64	111	6.17	3.09	22	200	32
bottom	24.5	31.2	6.63	95	6.18	2.28	6	171	26
Inner Harbor									
surface	23.0	19.8	7.70	101	6.18	2.31	41	204	35
bottom	24.2	29.6	6.16	87	6.18	3.44	16	161	32
Wailuku River									
surface	20.3	0	10.28	114	7.77	6.45	25	241	45

Grayed areas indicate that mean (or geometric mean) values of State water quality criteria were exceeded.

Mean turbidity levels are relatively high within the harbor (Table 7) and in the surface waters outside of the harbor. Most of the turbidity originates from land derived suspended material entering the bay as surface runoff from Wailuku River. It is notable that turbidity in the surface waters of the outer harbor during a March 1980 storm event (Table 8) was nearly an order of magnitude higher than average values for this sector of the bay.

Average nitrogen and phosphorus concentrations in all sections of the bay are higher in the surface waters, indicating that they originate primarily from freshwater sources. The relatively high mean concentrations of nitrate + nitrite nitrogen in both the surface and bottom waters of the inner harbor (Table 7) is probably indicative of the major groundwater inputs that occur in this sector of the bay.

Table 8. Water quality conditions in the vicinity of Hilo Harbor during a storm event (after M&E Pacific, 1980)

Temp	Salinity	DO	DO	pH	Turbidity	NO ₃ + NO ₂	TN	TP	CN, a
(°C)	(‰)	(mg/l)	(% sat)		(ntu)	(µg/l)	(µg/l)	(µg/l)	(µg/l)
Outer Harbor									
surface	19.7	5.1	9.70	110	7.63	21.7	86	394	26
bottom	23.9	32.4	6.50	93	8.05	3.88	5	212	18
Inner Harbor									
surface	19.8	6.8	9.26	106	7.69	7.77	116	233	14
bottom	23.4	29.8	5.90	83	8.06	5.18	22	271	17

Chlorophyll levels in both the inner and outer harbor areas are typically higher than the waters outside the harbor (Table 7) and may be related, in part, to longer residence times in these sectors of the bay.

Water quality in Hilo Harbor was monitored during a major storm event in March, 1980 (Table 8; M & E Pacific, 1980). The 24-hour rainfall occurring on March 17-18, 1980 measured 15.66 inches and was on the order of a "ten-year" storm. Significant increases in turbidity and nitrogen molecules are apparent in the surface waters during this storm, with notable decreases in temperature, salinity and pH in those same waters.

A comparison of the mean water quality parameters in Table 7 with the State's water quality criteria in Table 6, reveals that the harbor waters are in conformance for salinity, temperature, DO saturation levels and pH. Turbidity, nitrate + nitrite nitrogen, total nitrogen, total phosphorus and chlorophyll a typically exceed State criteria, especially in the surface waters. Water quality tends to improve in Hilo Bay away from the shore and the inner harbor.

Water quality conditions in the inner harbor waters of Hilo Bay on September 24, 2000 (Table 9) were in general agreement with mean values from earlier studies (see Table 7 above) with the following exceptions: turbidity levels were somewhat lower on September 24, 2000, while nitrate + nitrite nitrogen levels were notably higher. The high nitrate + nitrite levels on September 24, 2000 do not appear to be storm-related as salinity levels were not particularly depressed on this date. Further, turbidity levels in this section of the harbor would be expected to be elevated during or following a storm event, and they are in fact quite low compared with both storm-related conditions (Table 8) and average conditions (Table 7). Also, salinities on September 24, 2000 appear to be too high for attributing high nitrate + nitrite concentrations to groundwater inputs (compare the average salinities in Table 7 with those in Table 9).

Table 9. Water quality conditions in the surface waters of the inner harbor at Hilo Bay on September 24, 2000.

Station	Temp (°C)	Salinity (‰)	DO (mg/l)	DO (% sat)	pH	Turbidity (ntu)	TSS (mg/l)	NO ₃ (µg/l)	NO ₂ (µg/l)	NH ₃ (µg/l)	TN (µg/l)	TP (µg/l)	Chl. a (µg/l)
C1	26.1	22	6.40	80	8.0	0.72	1.2	149	<1	216	30	2.55	
P1	22.7	20	6.31	82	8.0	0.70	1.1	194	<1	234	36	2.27	
P2	24.6	18	6.30	84	8.0	0.81	0.8	230	1	275	41	1.24	
P3	23.7	20	6.16	82	8.0	1.02	1.4	228	<1	260	42	1.13	
R1	23.8	15	5.54	72	8.0	0.36	0.4	315	2	420	64	0.49	
mean	24.2	19	6.14	82	8	0.88	0.9	218	1	273	41	1.32	

Water quality conditions in Hilo Harbor are determined primarily by influges of surface water runoff from Waiau River and groundwater. Thus, as the influx of freshwater into the harbor increases, there is a corresponding deviation of water quality from optimal conditions, especially in the surface waters.

Biota

Searches of various databases of marine-related studies for the Hilo area produced 16 reports or publications for the area (O'Connell and Waller, 1963; Matthews and Marumoto, 1971; Sann Low Tom and Hara Inc., 1977; Walsh, 1991; M & E Pacific Inc., 1980; Kelly et al., 1981; Sea Engineering Inc., 1981; U.S. Army Corps of Engineers - Pacific Ocean Division, 1983; Dellar, 1985; Hallacher et al., 1985; Taguchi et al., 1985; Dudley, 1986; M & E Pacific Inc., 1986; Brock, 1991; Daulton and Hallacher, 1991; Sato, 1992). No biological studies have apparently been conducted (or reported) for the harbor.

The taxa of organisms recorded on our survey are shown in Table 10 along with totals of invertebrates and fishes for portions of the harbor corresponding to the

Table 10. Organisms recorded on survey of Hilo Harbor, September 23, 2000

Taxa 1	Taxa 2	Genus Species	Author, Date	Radio Bay	Pier 4	Pier 5-6	Pier 2-3
Chlorophyta	Caulerpaceae	<i>Caulerpa racemosa</i>	(Forssk.) J. Agardh (Merino) Kuding		x		
Phaeophyta	Sargassaceae	<i>Cladophora patula</i>	Sakai (Lumouou) Womdey	x			
		<i>Lobophora variegata</i>					
		<i>Sargassum</i> sp.					
		<i>Amanzia glomerata</i>	C. Agardh (Hepeich) Folsie				
		<i>Porolithon onkodes</i>	Havry (Wulfen) Harcoy				
Rhodophyta	Corallinaceae	<i>Maritensia fragilis</i>		x			
Rhodomelaceae		<i>Spyridia filamentosa</i>		x			
Total Algae Taxa				1	7	3	0
Porifera	Callyspongiidae	<i>Callyspongia cf. diffusa</i>	(Rubey, 1984)		x		
		<i>Clathra</i> sp.					
		<i>Dysidea cf. avara</i>	Schmidt, 1962 (Trosant, 1997)				
		<i>Blennia fistulosa</i>	(de Laubenfels, 1950)				
		<i>Polyrota protea</i>					
Hydrozoa	Pennariidae	Green sponge		x			
		Pink sponge		x			
		Red sponge		x			
		<i>Pennaria discicha</i>	Goldfuss, 1820 (Buck, 1852)				
		<i>Gymnangium hians</i>	(Nutting, 1906)				
Anthozoa	Teleostidae	<i>Arbacia bicolor</i>	Duchassaing & Lechevalier, 1850		x		
		<i>Caricoma rosea</i>					
		<i>Pocillopora damicornis</i>	(Linnaeus, 1758)				
		<i>Montipora capitata</i>	(Dana, 1846)				
		<i>Psammocora verrilli</i>	Vaughan, 1907				
Polychaeta	Chaetopteridae	<i>Chaetopterus</i> sp.			x		
		<i>Sabellastarte spectabilis</i>	(Götte, 1878)		x		
		<i>Sirorhidae</i>					
		<i>Balanus reticulatus</i>	Urbani, 1960				
		<i>Balanus eburneus</i>	Good, 1841				
Crustacea	Cirripedia	<i>Chthamalus proleus</i>	Dando & Southward, 1900 (Owler, 1791)		x		
		<i>Parulimus penicillatus</i>	(Herbst, 1783)				
		<i>Grapsus tenuicrustatus</i>	(Herbst, 1783)				
		<i>Eulalia tulipa</i>	(Chenu, 1843)				
		<i>Siphonaria normalis</i>	Goeldi, 1848				
Gastropoda	Siphonariidae	<i>Ischnochiton petaloides</i>	(Goeldi, 1846)				
		<i>Brachidontes crebristriatus</i>	Conrad				
		<i>Crassostrea gigas</i>	(Thunberg, 1793)				
		<i>Schizoporella</i> sp.					
		<i>Schizoporella</i> sp.					
Bivalvia	Mytilidae	<i>Mytilus</i> sp.					
		<i>Mytilus</i> sp.					
		<i>Mytilus</i> sp.					
		<i>Mytilus</i> sp.					
		<i>Mytilus</i> sp.					
Ectoprocta	Schizoporellidae	<i>Schizoporella</i> sp.					
		<i>Schizoporella</i> sp.					
		<i>Schizoporella</i> sp.					
		<i>Schizoporella</i> sp.					
		<i>Schizoporella</i> sp.					
Total Invertebrate Taxa				15	9	6	

Table 10. (continued).

Taxa 1	Taxa 2	Genus Species	Author, Date	Radio Bay	Pier 4	Pier 5-6	Pier 2-3
Osteichthyes							
Muraenidae		<i>Gymnothorax flavimarginatus</i>	(Ruppel, 1830)	x			
		<i>Pranestes insularum</i>	Jordan and Everman, 1903				
Altherinidae							
Carangidae		<i>Caranx sp.</i>	Cuvier and Valenciennes, 1833				x
		<i>Lutjanus fulvus</i>	(Quoy and Gaimard, 1824)		x		
		<i>Lutjanus kasmira</i>	(Forskal, 1775)				
		<i>Muldothia varicostata</i>	(Valenciennes, 1831)				
		<i>Parupeneus multiocellatus</i>	(Quoy & Gaimard, 1824)		x		
		<i>Parupeneus porphyreus</i>	Jenkins, 1903		x		
Chaetodontidae		<i>Chaetodon auriga</i>	Forskal, 1775				
		<i>Chaetodon frembilli</i>	Bennet, 1829				
		<i>Chaetodon lunula</i>	(Lacépède, 1803)				
		<i>Chaetodon millaris</i>	Quoy & Gaimard, 1826				
		<i>Hemiodus diaphanus</i>	Jordan, 1904				
Pomacentridae		<i>Abudefduf abdominalis</i>	(Quoy & Gaimard, 1824)				
		<i>Dascyllus albisella</i>	Gill, 1863				
		<i>Siganus fuscus</i>	(Ogby, 1809)				
Scaridae		<i>Scarus sp. (juv.)</i>	(Ruppel, 1828)				
Gobiidae		<i>Bathygobius fuscus</i>	(Lutwiler, 1756)				
Acanthuridae		<i>Acanthurus triostegus</i>	(Valenciennes, 1835)				
		<i>Acanthurus blochii</i>	Cuvier & Valenciennes, 1835				
		<i>Acanthurus dussumieri</i>					
Zanclidae		<i>Zanclus cornutus</i>	(Linnaeus, 1758)				
Tetraodontidae		<i>Arothron hispidus</i>	(Linnaeus, 1759)				
		Total Fish Taxa		10	10	6	9
Reptilia							
		Total Taxa		26	32	18	15

† - Species thought to be introduced (alien to Hawaiian Islands). All others are considered to be native species, with those in bold representing the endemics (found only in the Hawaiian Islands).

areas describe above. A total of only 63 species were recorded on the surveys (Table 10) composed of 9 macroalgae, 29 invertebrates, 24 species of fish, and the green sea turtle, *Chelonia mydas*.

Radio Bay

This is a very enclosed small harbor basin (Figure 3) with a narrow entrance on the northwest side that connects to the rest of Hilo Harbor, and is presently used primarily for mooring yachts. With its lack of circulation with the open ocean this basin is the most stagnant area in the harbor, which is reflected by the resident biota, dominated by forms usually found in harbor areas, and no invertebrates usually associated with coral reefs were found. The pier

wall along the harbor's southeast side (Figure 2) extends vertically to the bottom at about 3 m (10 ft) depth, where conditions are very turbid with visibility of less than 1 m, and the sediments are extremely fine, jelly-like silt. The prominent feature in the water column is an approximately 1 m (3 ft) thick surface layer of cold, fresh to brackish water that exists to some degree throughout the harbor but is most pronounced here in Radio Bay. Virtually no marine macro-organisms occur in the intertidal zone affected by this freshwater lens, which was approximately 5 C° (9 F°) cooler than the more saline water below. Below this zone the subtidal community is heavily dominated by nonindigenous barnacles, small *Chironomus* spp. in the upper few cm (inch) of the zone and the larger *Balanus reticulatus* and *Balanus tintinnulus*. The barnacles are extremely abundant, making up over 95% of the benthic organisms found on the pier wall. Only 15 invertebrates, 10 fishes and one macroalga were recorded along the pier wall and along the shoreline to the northeast, for a total of 26 species of organisms identified in Radio Bay (Table 10).

Along the shoreline that is the location of the proposed pier, the bottom is coarse sand overlaid with silt with no visible macrobiota on the surface, but with abundant burrow openings marking the location of subsurface dwelling organisms such as ghost shrimp (*Callinassa* sp.) or snapping shrimp (Alpheidae). Rock cobbles become abundant on the bottom with approach to the shoreline and water clarity improves. Although few macro-organisms other than barnacles are evident on the rock's upper surfaces, sponges and serpulid worms can be found on the bottom of rocks when they are overturned. The only fish observed in the area were a single jack (Carangidae) and a school of *lua*, *Prionace glauca*.

Within about 10 m (33 ft) of the shoreline the bottom rises sharply and is composed of large stones which appear to be a submerged rock wall that may mark the location of a former fishpond, now submerged. The shoreline, although indicated on Figure 2 to be a rock jetty, resembles a tree-covered beach, which at the time of the survey, was being used by numerous campers. It therefore appears that the area is considered a local recreational area.

Prospective Pier 4

This area begins at the east end of Pier 3 where the bottom is a rock reinforced shipping wall down to 11 m depth where the bottom is fine silt, with some rock rubble at intermediate depths. The rubble and rock wall supports abundant macroalgae with a coating of fine sediment. Many invertebrates were found in this area not seen elsewhere along this shoreline, such as two of the only four octocorals that occur in Hawaii, the native *Arhacia bicolor*, and the introduced *Carjita niisi*. Other invertebrates recorded were various species of sponges and two hard corals *Pocillopora damicornis* and *Montipora capita*, which were present but not common.

Starting approximately 100 m (330 ft) from Pier 3, the shoreline is undeveloped and covered with overhanging *Hemlock* trees that extend over the water's edge for about 100 m (330 ft) of shore. Then begins a residential area where houses have been built with their backyards

ending at the shoreline at small white sand beaches and seawalls. These houses and yards continue through the entire length of shoreline indicated for development, ending at approximately the heiau location indicated on Figure 2, totaling approximately 15 houses. This area, called Baker's Beach, is perhaps the only white sand beach in the Hilo area and reportedly was man-made from coral dredged from Hilo Bay between 1925 and 1930 (Sun, Low Tom & Iara 1977; Kelley et al. 1981). However, the consistent medium-grained nature of the sand on the beach and offshore indicates that the beach could not be derived from coral rubble. Offshore of this shoreline the bottom flattens out at a depth of approximately 2.5 m (8 ft) with a substratum of pebbles and cobbles in sand and silt. The only common macrofauna are various sponges growing on the rock surfaces. Further out, the bottom becomes mostly medium to fine white sand with numerous burrow openings interspersed with cobbles and patches of consolidated coral rubble.

Observations along this entire shoreline of approximately 550 m (180 ft) recorded 7 macroalgae, 15 macroinvertebrates and 10 fishes for a total of 32 macro-organisms, the largest number that were observed in any of the areas in Hilo Harbor.

Pier 5-6 Alignment

The area in the approximate location of the proposed Pier 5-6 alignment was surveyed by starting about 300 m (1,000 ft) offshore and swimming shoreward on a bearing of 185°. Depth along most of this transect was about 3.5 m (11 ft) and the substratum coarse white sand with intermittent outcrops of coral rubble, both with a fine silt coating. Sand cover became more abundant with approach to the shoreline and was about 95% of the substratum for most of the length of the transect.

Because of lack of solid substratum and vertical relief, few species macrobiota occurred along this transect. Only three species of algae, 9 invertebrates and 6 fishes were recorded, for a total of 18 species, the second lowest on these surveys. Two uncommon invertebrate species of interest usually occurring on coral reefs were found along this transect, the stinging pen hydroid *Gymnangium hians* and the encrusting hard coral *Panamaea verrilli*.

End of Piers 2 and 3

The area offshore of the end of Pier 3 proposed for location of mooring dolphins is a flat fine silt bottom in 11.5 m (38 ft) depth, with high turbidity and no apparent macrobiota. The pier pilings at the end of Pier 2-3 were inspected and found to have a limited but interesting community of macroinvertebrates and fishes. Only 5 invertebrates and 9 fishes were recorded on or near the pilings. However, these included two introduced invertebrates, the hydroid *Pennaria disticha* and the bryozoan *Schizoporella* sp., not found elsewhere on the survey but are generally common in Hawaiian harbors. Also found here was the introduced octocoral, *Caryophyllia*, which was otherwise found only at the beginning of the Pier 4 transect and was very abundant on pilings at the end of Pier 3, and the only lobster (*Panulirus penicillatus*)

observed on these surveys. Also unique for this station were the fishes the Moorish Idol (*Zanclus cornutus*), the Pennant Butterflyfish (*Henricus diphrates*) and the Raccoon Butterflyfish (*Chaetodon lunula*) more commonly seen in reef environments, and one green turtle, *Chelonia mydas*.

Conclusions

The primary water quality impacts to be expected from construction activities in Kawaihae Harbor are likely to be temporary increases in turbidity in the water column if the bottom area of the harbor is disturbed. Secondary impacts could include lowering of DO levels and an increase in nitrogen and phosphorus levels in the disturbed area due to mixing of bottom sediments into the water column. Prudent use of turbidity curtains in the construction areas will minimize these potential impacts on the surrounding environment.

Similar impacts can be expected for construction activities in Hilo Harbor. However, because this harbor is the receiving basin for runoff via the Wailuku River, it is likely that major sediment deposits have accrued over the years in the vicinity of potential pier construction areas. Thus, greater perturbations for turbidity and nutrient levels in the water column might be expected in comparison with Kawaihae Harbor, necessitating greater care and caution in the deployment and maintenance of siltation curtains around construction activities.

Kawaihae Harbor Water Quality and Biota

Vertical stratification of the seawater within Kawaihae Harbor is minimal, indicating that there is relatively little groundwater input to the harbor basin. Virtually all of the water within the harbor is very similar to the oceanic water outside. Surface water in the inner harbor is somewhat warmer than the deeper water due to solar heating during the day. DO levels are close to saturation, with the highest concentrations observed near the inner part of the entrance channel. Slightly elevated nutrient levels at low tide and the slightly reduced salinity of surface water indicate that groundwater discharge has a minor effect on water quality in Kawaihae Harbor. Locally elevated nitrate levels suggest that this groundwater discharge is most significant near the inland portion of the entrance channel and along the coast north of the harbor. Consistent with the low nutrient concentrations observed at Kawaihae, chlorophyll levels are below 1 µg/l throughout the harbor. Chlorophyll levels inside the harbor are only slightly higher than those outside, probably reflecting a slightly greater residence time of the inside water mass.

Due to its location on the leeward coast of the Island of Hawaii and its accessibility to open coastal water circulation, Kawaihae Harbor has perhaps the most pristine marine environment of any harbor in the Hawaiian Islands. Biotic conditions are therefore more typical of open coastal areas throughout a large part of the harbor rather than conditions seen in most typical harbors having generally more turbid and nutrient enriched water masses.

Within the harbor, a distinct contrast can be seen between the conditions in dredged but undeveloped areas such as proposed Piers 1 and 3-5, which continue to support biological communities typical of nearshore coastal environments outside the harbor, compared with the dredged and developed areas at Pier 2 and the dolphins at proposed Pier 5. In these latter areas, where artificial substrata provide settling surfaces for filter feeding invertebrates, the harbor biological community more closely resembles that in harbors elsewhere in Hawaiian Islands. It is likely that the proposed development/expansion within the harbor basin will further this transition to fewer open coastal invertebrates and fishes, with generally reduced overall diversity.

The honu or Pacific green sea turtle (*Chelonia mydas agassizi*) was the only protected species observed within Kawaihae Harbor, although the gastropod mollusk known as 'opihi (*Cytilina* spp.) can be anticipated as present in low numbers, possibly within the harbor and likely on the outside face of the harbor breakwater. The honu is protected by both State and Federal endangered species laws: listed as a threatened species by both the Department of Land and Natural Resources (DLNR, 1998) and U.S. Fish and Wildlife Service (CFR, 1999). The project area is not prime habitat for this threatened species, which may however, regularly wander into the harbor. The State of Hawaii has a prohibition on taking 'opihi under a certain size for purposes of selling the meat (DLNR, 1981) without a permit. However, this rule does not protect the species from either catches for personal use or from other sorts of destruction. The 'opihi is not a listed species nor a candidate for listing under Federal endangered species rules (CFR, 1999; Federal Register, 1999).

Hilo Harbor Water Quality and Biota

Vertical stratification of the water in Hilo Bay is pronounced and is caused by large freshwater inflows from both surface and ground-water sources. This density (salinity/temperature) stratification persists throughout the dry season, undoubtedly due to the large ground-water inputs to the harbor. Salinity ranges from about 5 ‰ in the surface water to about 33 ‰ in the bottom water of the outer harbor. Water temperatures in the harbor range from about 23 to 26 °C (73 to 79 °F). DO levels tend to be relatively high in the surface water, especially during the wet season. DO levels in the bottom water tend to be low, sometimes approaching anaerobic conditions in the wet season due to lack of mixing with surface water.

Nutrient levels are high during the wet season. Nitrate-nitrite levels are especially high in ground-water, while phosphorus concentrations are high in surface runoff waters. During the wet season in Hilo Bay, and especially during a storm event, chlorophyll levels are typically low. Chlorophyll levels are generally more than an order of magnitude higher during the dry season, probably due to the longer residence times, greater water clarity, and lower fluctuation in salinity.

Remarkably, there does not seem to be any studies or reports that describe the biological environment within the confines of Hilo Harbor or any surveys of the organisms that occur

there. The areas subject to be affected by the proposed Harbor developments are inhabited by a low diversity of typical harbor-dwelling organisms with a presumed high tolerance to turbidity, sedimentation, fresh water input, elevated nutrients, and other environmental factors associated with survival in marine areas of restricted circulation. Many of the organisms (18%) found by our biological survey are introduced or alien species. It is not likely that proposed harbor expansion and development will impact any population or community of marine organisms that are regarded as sensitive or valuable, with the possible exception of the green turtle (*Chelonia mydas*), a listed species, seen occasionally inside the harbor.

Only one protected species was observed with Hilo Harbor: the honu or Pacific green sea turtle. Possibly 'opihi occur on the harbor breakwater, especially on the seaward face. The protective status of the honu and the 'opihi are described above under Kawaihae Harbor. The project area is not prime habitat for these species. Turtles may, however, wander into the harbor from Hilo Bay.

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Appendix F

**PHASE 1 - ENVIRONMENTAL SITE ASSESSMENT
HILO HARBOR**

R.M. Towill Corporation

November 2000

PHASE I - ENVIRONMENTAL SITE ASSESSMENT

Phase I - Environmental Site Assessment

Hilo Harbor
Tax Map Key (3)-2-1-7 and (3)-2-1-9
Hilo, Hawaii

HILO HARBOR
TMK (3)-2-1-7 AND (3)-2-1-9
Hilo, Hawaii

NOVEMBER 2000

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EXECUTIVE SUMMARY

R. M. Towill Corporation (RMTC) has performed a Phase I Environmental Site Assessment for the Hilo Harbor, a State of Hawaii property, located on Tax Map Key Plat #s (3)-2-1-7 and (3)-2-1-9, located in the South Hilo District of the Island of Hawaii. The property is currently the site of an active harbor operation for the east side of the island and is surrounded by commercial, industrial and residential lands.

The property covers approximately 80 acres and is currently owned by the Harbors Division, Department of Transportation, State of Hawaii according to the most recently available property deed records.

This assessment was conducted to determine whether conditions or situations at the site might result in present real or potential hazards, or environmental liabilities as dictated by federal, state, and local statutes and regulations. Specific areas investigated included: historical uses of the subject property; signs of gross surface contamination; hazardous materials and wastes; and the presence of equipment containing polychlorinated biphenyls (PCBs), and underground storage tanks (USTs).

A review of the environmental regulatory databases indicated the following:

- No U.S. EPA or state Superfund sites are within a one-mile radius of the property;
- No CERCLIS site is located within a half-mile radius of the property;
- No RCRA treatment, storage, and disposal facility is located within a half-mile radius of the property;
- No RCRA corrective action sites were identified within a one-mile radius.
- Six RCRA generators are located on the property or on adjacent properties;
- Four underground storage tanks are located within a quarter-mile radius of the property;
- Two leaking underground storage tank facilities are located within a half-mile radius of the property;
- No active landfills are located within a half-mile radius of the property; and
- No spills or incidents connected with the property are entered on the ERNS database.

A site reconnaissance at the property, performed on August 9, 2000 found no significant, observable environmental conditions connected with the property. The following potential environmental concerns were identified during the site assessment process:

- There is a large number of aboveground and underground storage tanks on harbor properties and in the vicinity. There exists the potential for leakage of petroleum product to the soils and ground water in this area. No evidence was noted to verify this possibility, however no sub-surface investigations were performed.
- There is a large system of piping that carries the petroleum product from ships at the piers to the storage tanks. These pipes may leak causing contamination of the soils and ground water in this area. No leakage was observed or documented, however additional investigation may be required to verify this potential problem.
- Some of the buildings at the harbor contain asbestos-containing building materials. No thorough study was performed to determine the extent of the presence of asbestos or lead-based paint. An inspection should be performed in the harbor buildings to determine if these contaminants are present on the property to assist future construction and demolition projects.

1.0 INTRODUCTION

R. M. Towill Corporation (RMTC) has performed a Phase I Environmental Site Assessment for the Hilo Harbor, a State of Hawaii property. The harbor consists of approximately 78 parcels located across two Tax Map Key Plats, (3)-2-1-7 and (3)-2-1-9. The parcels are located on Kalaniana'ole Road in the town of Hilo in the South Hilo District on the Island of Hawaii. Throughout this ESA the parcels of interest will be referred to as the subject property.

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment was to investigate past and present land uses of the subject property and surrounding areas to determine if the potential for hazardous materials contamination exists. This site assessment is being performed as a part of the Environmental Impact Statement for the Hawaii Commercial Harbors 2020 Master Plan. The Master Plan describes the plans for the development of the harbor properties over the next 20 years. Specific attention was paid to the areas of the property that are scheduled to be impacted during the planned expansion activities.

1.2 Scope of Work

This assessment was performed in accordance with American Society for Testing and Materials (ASTM) Standard: E 1527-00, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process." The ASTM Standard defines customary practice for conducting environmental site assessments of a parcel of commercial real estate with respect to contaminants within the scope of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and to petroleum products.

RMTC performed the following tasks:

- Reviewed available documents including maps and aerial photographs to assess past land use at the property;
- Conducted a database review and contacted local and State agencies to determine the regulatory history associated with the property;
- Conducted site reconnaissance to assess present site conditions;
- Reviewed site geology and hydrogeology; and
- Prepared Phase I Environmental Site Assessment Report which documents RMTC's findings.

This assessment is based on information that has been provided to RMTC by applicable agencies and individuals. Conclusions and recommendations are drawn from the cumulative findings of the aforementioned sections.

1.3 Limitations

The conclusions presented in this report are professional opinions based solely upon visual observations of the sites and their respective vicinities, and our interpretation of the available historical information and documents reviewed. They are intended exclusively for the purpose outlined herein and at the site location and project indicated. The scope of services performed in execution of this investigation may not be appropriate to satisfy the needs of other users, and any use or re-use of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of said user.

R. M. Towill Corporation's services are performed, within the limits prescribed by its Clients, with the usual thoroughness and competence of the consulting profession, in accordance with the standard for professional services at the time those services are rendered. No warranty or representation, either expressed or implied, is included or intended in its proposals, contracts, or reports.

Opinions and recommendations presented herein apply to site conditions existing at the time of our investigation and those reasonably foreseeable; they cannot necessarily apply to site changes of which this office is not aware and has not had the opportunity to evaluate.

2.0 SITE DESCRIPTION

2.1 Location and Legal Description

The property consists of approximately 78 parcels located in two Tax Map Key Plats, (3)-2-1-7 and (3)-2-1-9, located on the shore of the Kauhio Bay on the windward side of the island of Hawaii. The property is on Kalaniana'ole Road. The total area of the property is approximately 80 acres. The property is located in an area of mixed commercial, industrial and residential land usage.

2.2 Site and Vicinity Characteristics

According to the U.S. Geological Survey topographic map of the area (Hilo Quadrangle), the property is located at approximately 19° 43' 57.7" North latitude and 155° 3' 24.5" West longitude. The property is located in the South Hilo District of the Island of Hawaii, on the shoreline of the Kauhio Bay. The elevation of the property is less than 10 feet above mean sea level (amsl).

ESA for TMK # (3)-2-1-7 & (3)-2-1-9
Hilo, Hawaii

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2.2.1 Geologic Setting and Soils

The property is located near the city of Hilo, along the shoreline of the Pacific Ocean at Kauhio Bay on the Island of Hawaii, on land classified by the U.S. Department of Agriculture Soil Conservation Service as a single type: (KFD) of the Keaukaha Series. The Keaukaha Series consists of well drained, thin organic soils overlying pahoehoe lava bedrock. These soils occupy the low areas of Mauna Loa. It is undulating to rolling and follows the topography of the underlying pahoehoe lava. Rock outcrops occupy about 25 percent of the area. The surface of this soil is very dark brown muck about 8 inches thick. The soil is strongly acid.

2.2.2 Groundwater

The property is situated down gradient of the underground injection control (UIC) line, according to the Hawaii Department of Health Underground Injection Program Map from 1984. This indicates that the ground water is not likely to be used for drinking water due to the presence of a significant amount of salt water from the ocean. Groundwater elevations in the area are expected to be at sea level or slightly above. There are no public drinking water supplies within a mile of the property and there are two drinking water wells between a half mile and a mile to the southwest. The use for these wells is not available, however it is unlikely that any site activities will impact the quality of the water in these wells.

2.2.3 Surface Waters

There are no significant surface drainages that traverse the harbor site from areas up gradient of the site. A river mouth is located approximately one mile to the west of the property, but there is no likely impact from harbor operations on the quality of the water in this resource. Surface runoff of the site runs directly into the Kauhio Bay. Therefore any spills or releases of chemicals on the site are likely to impact that area. However, no evidence of such impacts was noted in this assessment.

2.3 Current Uses of Property

The properties that are owned by the State of Hawaii and operated by the Harbors Division of the Department of Transportation are used for the direct operation of the harbors, and lands leased by the state for a variety of uses. The properties around the harbor lands are used for a variety of light industrial and commercial operations, agriculture, and Hilo International Airport.

Lands leased by the state at the harbor are used for residential purposes, petroleum storage and distribution, cement mixing and loading, shipping container receiving and storage, automobile receiving and storage, and sugar product loading and storage facilities. Also on harbor property, there is a small area that is occupied by squatting families on the edge of Radio Bay on the east side of the harbor. There are approximately 30 - 40 temporary structures on the property.

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3.0 ENVIRONMENTAL RECORDS REVIEW

In order to identify the presence of adverse environmental conditions at the subject property, several published sources of environmental records were searched. This section lists those environmental databases that were searched and the results of each search. The importance of the entries of each database is listed in the following sections.

3.1 Agency Lists Reviewed

A review was performed of the environmental regulatory databases (all updated within 90 days of search, or at most recent update available) required by ASTM methodology at the respective search distances specified by the methodology.

3.2 Federal Database Search Results

3.2.1 USEPA National Priorities List

The National Priorities List compiled by the U.S. Environmental Protection Agency lists the Superfund Hazardous Waste Sites as required by federal law. The identification of the worst hazardous waste sites in the country is mandated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) passed in 1980. This list is prioritized according to the severity of the risk to public health and the environment.

There are no NPL sites located within one mile of the subject property.

3.2.2 USEPA RCRA TSD Facilities List

The EPA maintains a list of Treatment, Storage, and Disposal (TSD) Facilities that either treat, store or dispose of hazardous waste as defined by the hazardous waste regulations published by the EPA according to the Resource Conservation and Recovery Act (RCRA). This information is contained in the Resource Conservation and Recovery Information System (RCRIS).

There are no TSD facilities located within a half of a mile of the Hilo Harbor.

3.2.3 USEPA RCRA CORRACTS List

The RCRA CORRACTS or Corrective Action Report, lists those facilities that generate, treat, store, or dispose of hazardous wastes that have undergone remediation activity. These sites have experienced spills or releases of hazardous chemicals prompting the need for clean up action. The extent and type of contamination is listed in this report as well as the status of the corrective actions.

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Hilo, Hawaii

RMTC Project # 1-18844-0E
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There are no hazardous waste facilities located within one mile of the subject property that have undergone corrective action according to this report.

3.2.4 USEPA CERCLIS List

The CERCLIS List, or Comprehensive Environmental Response, Compensation, and Liability Information System contains data on potentially hazardous waste sites that have been reported to the EPA by states, municipalities, private companies, and private persons. These sites are considered for possible clean up activities or inclusion onto the NPL.

There are no entries on the CERCLIS for properties within a half of a mile of the subject property.

3.2.5 USEPA ERNS List

The Emergency Release Notification System list, compiled by the US EPA, lists the locations and other data on reported releases of oil and hazardous substances. All releases in excess of threshold quantities are required to be reported and included in this list.

No spills or incidents connected with the property are entered on the ERNS database.

3.2.6 USEPA RCRA Generators List

The EPA tracks all facilities that generate hazardous wastes in excess of threshold quantities set in the RCRA regulations. RCRA large quantity generators (LQG) are those that produce in excess of 1000 kilograms of hazardous waste per month, and small quantity generators (SQG) are those that produce in excess of 100 kg per month and less than 1000 kg per month.

The following hazardous waste generators were listed on the EPA RCRA list within a quarter of a mile.

Facility / Location	Generator Status	Other Information
Tosco Hilo Terminal 607 Kalaniana'ole Ave.	Large Quantity Generator (LQG)	No violations found
Shell Oil Co. Hilo Plant 661 Kalaniana'ole Ave.	LQG	No violations found
Farmer Pesticide Disposal Project 60 Kuhio Road	Small Quantity Generator (SQG)	No violations found

Facility / Location	Generator Status	Other Information
Brewer Chemical Corp. 60 Kuhio Road	Conditionally exempt SQG	No violations found
Tesoro Hawaii Hilo Terminal No. 2 595 Kalaniana'ole Ave.	SQG	No violations found
Tesoro Hawaii Hilo Terminal No. 3 607 Kalaniana'ole Ave.	SQG	No violations found
Big Island Nissan 471 Kalaniana'ole Ave.	SQG	No violations found
Chevron Products Co. Hilo Terminal 666 Kalaniana'ole Ave.	SQG	No violations found

3.3 State and Local Database Search Results

3.3.1 State of Hawaii Hazardous Waste Sites

This list includes all facilities, sites, or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has investigated or may investigate under Hawaii Revised Statutes.

There are no state recognized hazardous waste sites within a mile of the subject property.

3.3.2 State of Hawaii Landfill Sites

The state list of Solid Waste Facilities and Landfill Sites contains an inventory of solid waste disposal facilities or landfills in the state. These facilities may be active or inactive or open dumps that failed to meet RCRA criteria for proper solid waste landfills.

There are no state recognized landfills or disposal sites within a half of a mile of the harbor properties.

3.3.3 State of Hawaii UST List

This list of registered underground storage tanks is administered by the State of Hawaii UST division. All tanks that are registered as required by the federal RCRA regulations are contained

on this list. The database also includes the number and types of tanks registered, the regulatory status of the tanks, and whether they have been removed and closed according to state law.

There were four underground storage tank sites listed in the state list of registered USTs located within a quarter of a mile of the site.

Facility / Location	No. and Types of USTs	Regulatory Status
Jack L. Ayers, Jr. 555 Kalaniana'ole Ave.	1 - unknown capacity, installation date not reported.	Tank was taken permanently out of use in 1991.
Theo H. Davies 500 Kalaniana'ole Ave.	1 - 1000 gallon tank, installed 1976, diesel 1 - 2000 gallon tank, installed 1976, gasoline	Both tanks were taken permanently out of use. No information on the closure and removal was available.
Big Island Nissan 471 Kalaniana'ole Ave.	1 - 500 gallon tank, installed 1967, used oil 1 - 1000 gallon tank, installed 1967	Both tanks were taken permanently out of use in 1989.
Pacific Machinery 456 Kalaniana'ole Ave.	1 - 1000 gallon tank, installed 1962, gasoline 2 - 550 gallon tank, installed 1962, diesel and other substance	All of the tanks were taken permanently out of use in 1995.

Two of the facilities listed in the UST section of the regulatory report were also identified on the Leaking Underground Storage Tank (LUST) Listing and are discussed in the LUST findings below. The remaining facilities listed in the UST section of the regulatory report are not listed on any other database, such as the LUST database, which reports releases, spills or other incidents. The UST database is merely a listing of all required facilities to register their USTs for tracking purposes and is not necessarily of facilities with reported contamination incidents. Based on the absence of reported releases, these facilities are not anticipated to have a significant adverse impact on the environmental integrity of the subject property. Additional investigation may be required at these sites if excavation or construction activities are proposed for these properties.

3.3.4 State of Hawaii Leaking UST List

The state Department of Health Underground Storage Tank Division records the location and regulatory status of all sites in which leaking underground storage tanks have been identified. There was only one leaking underground storage tank site identified within a half of a mile of the subject property. Information on this site was reviewed with the Department of Health files to determine the current status of the site clean up activities. The result of this records review is summarized on the following table.

Facility Location	Records Searched	Status of Site
Pacific Machinery 456 Kalaniana'ole Ave	Leaking Underground Storage Tanks (LUST)	All tanks were installed in 1962 and taken permanently out of use in 1995.
Kuwaye Trucking Inc. 2055 Kamehameha Ave.	Leaking Underground Storage Tanks (LUST)	All tanks were installed in 1961 and have been taken permanently out of use by 1993 or before.

Files were reviewed at the State of Hawaii Department of Health for the four leaking underground storage tank facilities listed in the LUST database. Two of the sites are part of the subject property and the other two are within a half-mile of the subject property. All four facilities were found to have localized environmental contamination. The contamination at each of the sites was discovered during UST removal operations. The contamination was minimal and measures were taken to excavate contaminated soils. The State of Hawaii Department of Health issued No Further Action (NFA) letters to the responsible parties. In each case, the analysis of soil samples collected from underneath the tanks showed contamination levels either below the detection limit or below the DOH standards for clean soils after closure.

3.4 Historical Use of Property

3.4.1 Aerial Photographs

Aerial photographs were obtained from the RMTC Photogrammetry Department for the property from the years 1952, 1969, 1972, 1985 and 1998 and examined for indications of previous site usage.

The 1952 photograph shows the existence of the harbor and a few structures on the subject property. There are several aboveground storage tanks on the south edge of the subject property. To the south and to the east of the subject property is wooded with some residences directly to the southeast. The land southwest and west of the subject property is developed. The development appears to be for industrial uses. The photograph shows several aboveground storage tanks on properties southwest and west of the subject property.

The 1969 photograph shows the site with additional aboveground storage tanks on the site. Gasoline storage tanks and approximately fifteen large propane storage tanks have been erected on the east side of the property. There is increased development on surrounding properties with aboveground storage tanks appearing to the south. The continued development is concentrated to the south and west of the subject property. A wastewater treatment plant is shown on the property to the east of the subject property.

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The 1972 photograph shows the site much as it was in 1969, but with added development on the surrounding properties. The continued development is concentrated to the south and west of the subject property.

The 1985 photograph shows the property much as it was in 1972. Development on the surrounding properties continues to increase. The land to the southeast remains residential.

The 1998 photograph shows the site much as it appears now. Four storage tanks were removed from the site. The tanks were located just to the west of the water tower. The land to the southeast remains residential.

3.4.2 Historical Use Information

Hilo Bay's first reported recognition as a viable harbor location took place in 1825. Traffic to the area was light and the need for a developed harbor was not yet needed. The United States Exploring Expedition, in 1940-41, surveyed Hilo and its surrounding areas. Due to the praise of the expedition that the bay is an excellent location for a harbor, the increased cultivation of sugar cane, and the growing number of visitors, the scene was set for the development of Hilo Harbor.

From the mid-to-late nineteenth century, several small landings and piers were built along the shores of Hilo Bay. Around 1895, the government of the Republic of Hawaii appropriated money for the construction of 2 piers, a small boat landing and a ship wharf, and the construction of a breakwater. The two piers were built between 1897 and 1899. The small boat pier was quickly leased to a private company after the Minister of the Interior decided it was inadequate for their use. The 250-foot ship wharf remained operational. The breakwater was constructed in six sections between 1908 and 1930. The 10,000-foot long breakwater was built along the Blonde Reef starting on the shore of Kauhio Bay.

The old government ship wharf was removed and a new wharf constructed on the shores of Kauhio Bay near the start of the breakwater. This wharf is known as Pier 1, or Kauhio Wharf, and was constructed in 1912. Pier 1 marks the beginning of permanent construction on the current site of Hilo Harbor. The construction of Pier 2 was completed in 1923. It was originally 528 feet long and 110 feet wide. Pier 3 was constructed in 1926-27 and was made a part of Pier 2. All three of the Piers had a double line of railroad tracks on their berthing sides. Large sheds were built on top of the piers.

A tsunami hit Hilo in 1946, leaving behind massive damage to the harbor facilities and the breakwater. After 2 years of assessment, construction of permanent structures began. A second tsunami hit the Hilo area, but the damage to the harbor was not as significant as what was caused by the tsunami in 1946.

Several large improvements were made at the harbor in the years to come. In 1948, Matson Navigation Co. built four steel silos and associated equipment needed for the handling and

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storage of bulk sugar. In the 1960's, in 1980 and again in 1987 dredging activities were conducted for the expansion of the piers.

In 1993 and 1995, improvements to the Harbor were concentrated on the expansion and improvement to existing cargo handling space. The area behind Pier 3 was paved, land was purchased and used for cargo space, and a cargo yard on the south side of the site was expanded by almost three acres.

4.0 SITE RECONNAISSANCE

4.1 Site Inspection

On August 9, 2000, David Gerow of RMTC performed a site visit of the site to review current site usage and to look for evidence of chemical contamination and other potential environmental problems. The property consists of approximately 78 parcels covering approximately 80 acres.

The subject property consists of an active harbor operation and land leased to a variety of commercial companies. The harbor operation consists of 3 piers and buildings associated with the operation of the harbor. While the subject property is mostly State-owned land, a portion of the subject property is leased to private businesses. Some of the tenants maintain gasoline and propane storage tanks on the subject property. The petroleum storage tanks are fed via an underground pipeline from Pier 3. The pipeline runs in a north/south direction. At the southwest corner of the subject property are two aboveground tank farms, gasoline and propane.

The existence of parcels on the subject property containing aboveground and underground fuel storage tanks is a concern regarding the potential for soils and/or groundwater contamination. Additional research was undertaken regarding knowledge of past incidences with leaks resulting in localized contamination and with the potential for unknown existing contamination.

A tour of the neighborhood revealed a mix of residential and commercial areas in the neighboring properties. Lands to the south and west of the subject property are occupied by industrial facilities, some of which contain aboveground storage tanks, which appear to be used to store petroleum products. Residences are located southeasterly from the subject property.

During this inspection, it was noted that the sugar handling facilities were about to be demolished and the properties will be used for additional container storage and handling yards. Some of the sugar handling buildings contain asbestos-containing transite panels that must be removed prior to demolition. If the panels are not properly removed, asbestos debris and fibers will contaminate the area and the vehicles used for transport, and will expose workers in the area to the toxic dusts.

4.2 Interviews

On August 9, 2000, RMTC interviewed the Harbor Master of the Hilo Harbor for information on any environmental issues that he may be aware of. Mr. Ian Birmie is a long time employee of the harbor. According to Mr. Birmie, there have not been any spills of hazardous materials, no releases of petroleum from any of the underground or aboveground storage tanks, or other environmental issues at the Hilo Harbor.

5.0 FINDINGS AND CONCLUSIONS

RMTC has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Standard E 1527-00 for the property identified in Tax Map Key Plat #s (3)-2-1-7 and (3)-2-1-9. The assessment included a site reconnaissance to observe existing conditions, and a review of available local, state, and federal records. This assessment has revealed no evidence of significant, recognized environmental conditions in connection with the property, however several potential conditions exist that may affect the future development of the property and the liability of the owner of the properties. These conditions include:

□ Due to the presence of aboveground and underground petroleum storage tanks, there is a possibility of sub-surface soil and groundwater contamination on the affected properties. While no leaks or spills were identified in this assessment, the potential exists for there to be releases of petroleum to the ground. Prior to excavation work on or near these properties, precautions should be taken to protect the environment and the workers in the area from exposure to these hydrocarbons.

□ A number of piping systems are present to carry petroleum products from ships at the piers to the storage tanks on or near the harbor properties. While no releases from these piping systems were documented during this assessment, the potential exists that there have been leaks from these pipes. Prior to any excavation work in the vicinity of these pipes, additional investigation may be required or precautions should be taken to protect the environment and the workers in this area.

□ Several of the buildings in the harbor complex apparently contain transite asbestos siding, including the Pier 1 Shed and the sugar handling buildings scheduled for demolition. Additional asbestos-containing materials and lead-based paint may also exist in these buildings based on their age and the type of construction used. An asbestos and lead paint inspection should be performed to identify the presence of all asbestos containing building materials and lead-based paint hazards in the harbor buildings. Knowing the location and types of these materials present is useful in designing future renovation and demolition projects.

No other environmental conditions were observed at the property or during the survey of the surrounding properties.

6.0 SIGNATURES

The Phase I Environmental Site Assessment was performed by Mr. David Gerow of R. M. Towill Corporation.


David Gerow, CIH, CSP
Date 11/14/00

7.0 REFERENCES

- Experian, State of Hawaii Realty Directory, 31th Edition (1997).
- Sato, Harry H; Ikeda, Warren; Paeth, Robert; Smyth, Richard; Takairo, Jr., Minoru; Soil Survey of the Island of Hawaii, State of Hawaii (December 1993).
- State of Hawaii DOH, LUST Database (October 2, 2000).
- State of Hawaii DOH, UST Database (October 2, 2000).
- State of Hawaii DOH, Permitted Landfills in the State of Hawaii (August 3, 2000).
- U.S. Environmental Protection Agency (EPA), CERCLIS (August 28, 2000).
- U.S. EPA, Emergency Response Notification System Database (August 2, 2000).
- U.S. EPA, National Priority List (August 7, 2000).
- U.S. EPA, RCRIS (September 26, 2000).

**APPENDIX A
FIGURES**

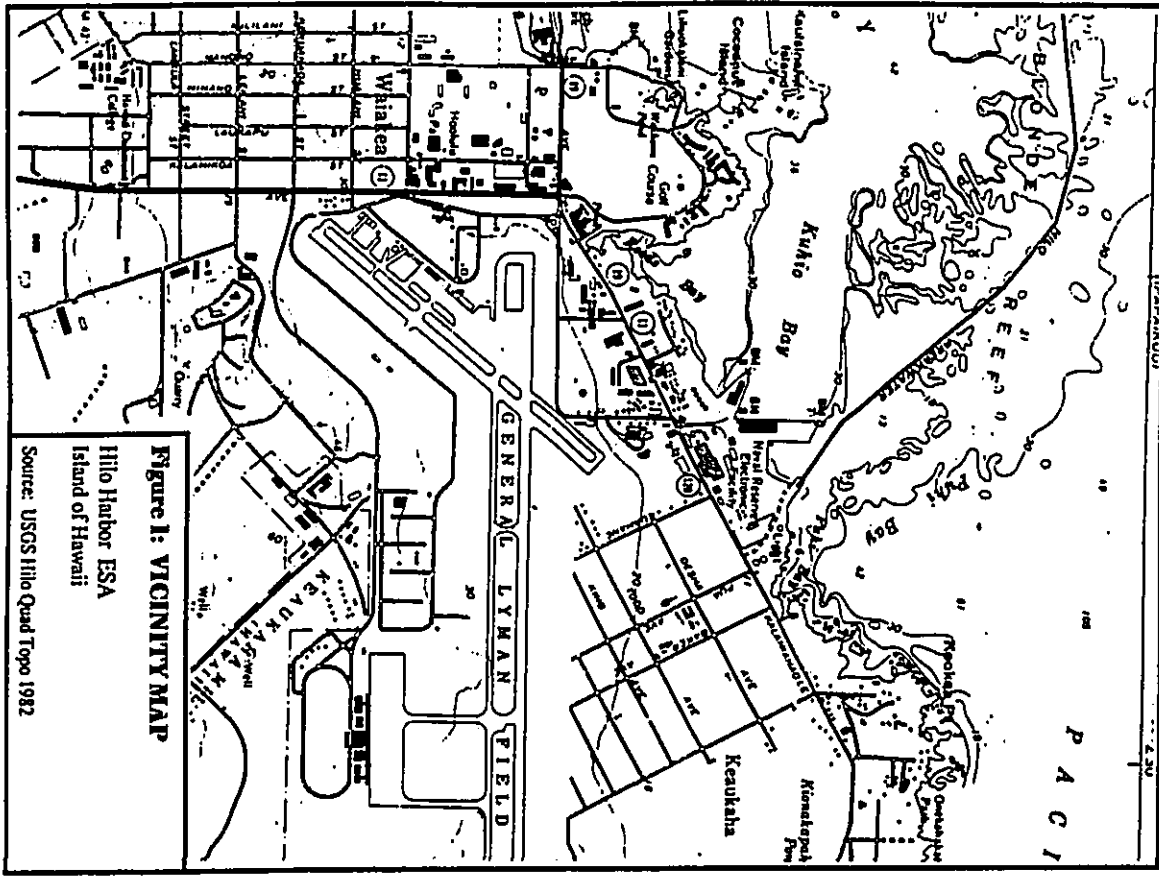


Figure 1: VICINITY MAP
Hilo Harbor, ESA
Island of Hawaii
Source: USGS Hilo Quad Topo 1982

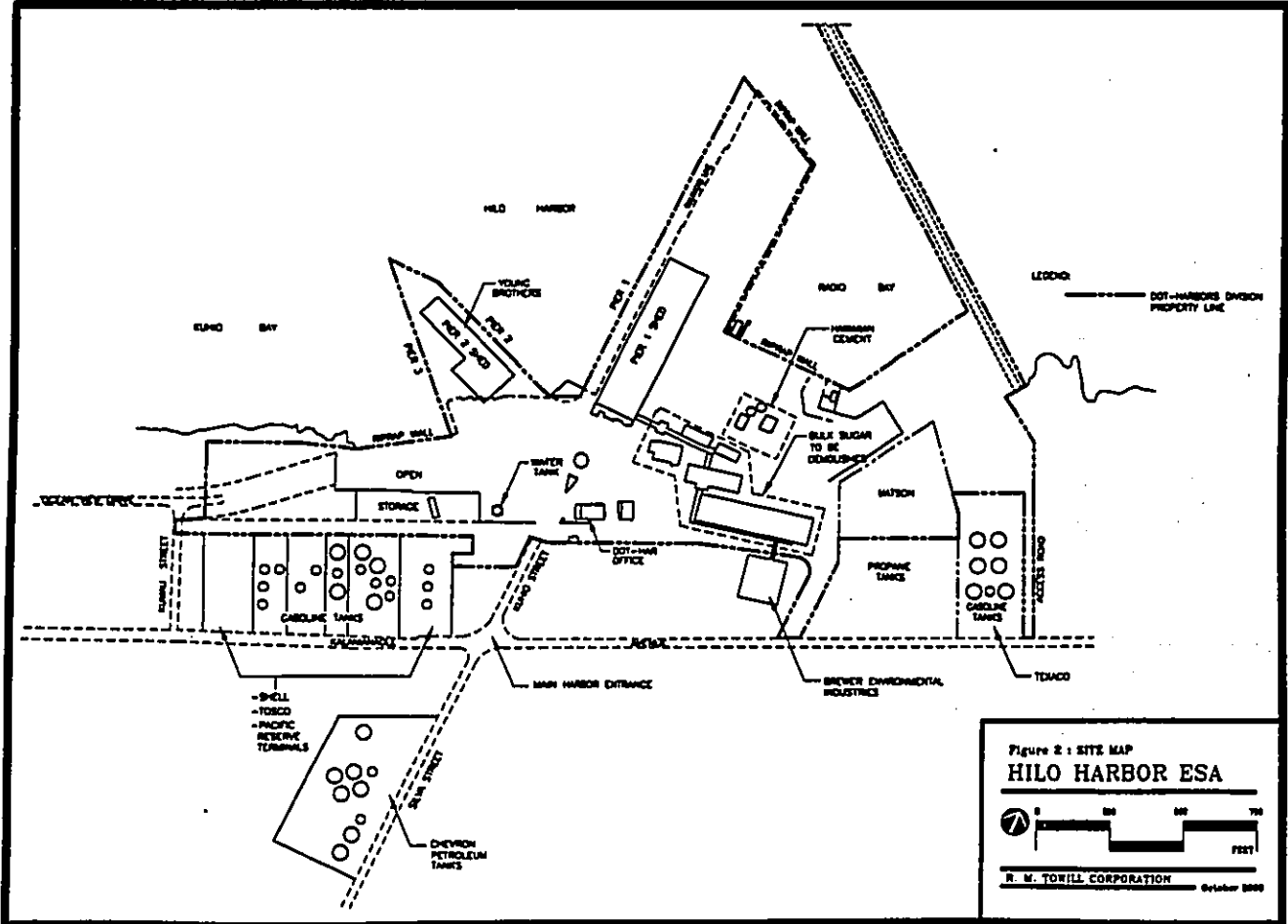


Figure 2: SITE MAP
HILO HARBOR ESA
R. W. TORILL CORPORATION October 1988

DOCUMENT CAPTURED AS RECEIVED

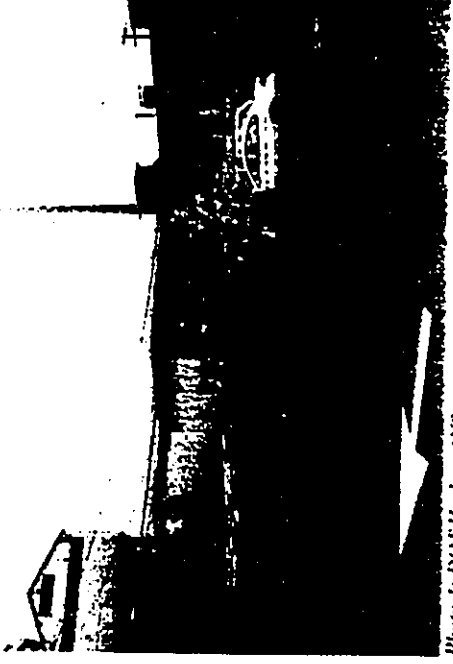


Photo 1: DDT Harbors Office

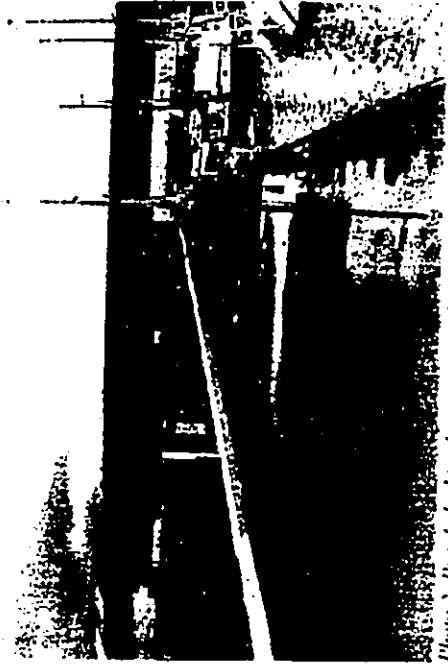


Photo 2: Pier 1 shed with transite panels

APPENDIX B

PHOTODOCUMENTATION

DOCUMENT CAPTURED AS RECEIVED



Photo 5: From Pier 3 towards tank farm



Photo 6: House facing bay



Photo 7: From Pier 1 towards tank farm



Photo 8: Tank vapor facility on left to be demolished and Howarth Cement plant on right

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Appendix G

**PHASE 1 - ENVIRONMENTAL SITE ASSESSMENT
KAWAIHAE HARBOR**

R.M. Towill Corporation

November 2000

PHASE I - ENVIRONMENTAL SITE ASSESSMENT

Phase I - Environmental Site Assessment

KAWAIHAE HARBOR
TAX MAP KEY (3)-6-1-3
Kawaihae, Hawaii

Kawaihae Harbor
Tax Map Key Plat Map (3)-6-1-3

Kawaihae, Hawaii

NOVEMBER 2000

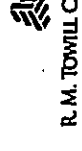
PREPARED FOR:

Harbors Division, Dept. of Transportation
State of Hawaii
79 South Nimitz Highway
Honolulu, Hawaii 96813

PREPARED BY:

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EXECUTIVE SUMMARY

The R. M. Towill Corporation (RMTC) performed a Phase 1 Environmental Site Assessment for the Kawaihae Harbor, a State of Hawaii property, located on Tax Map Key Plat Map # (3)-6-1-3, in the South Kohala District of the Island of Hawaii. The property is a currently the site of an active state commercial harbor operation. Neighboring properties contain a mix of agricultural, commercial, and residential uses.

The property covers nearly 100 acres of land in 28 parcels along the shore of Kawaihae Bay and is currently owned by the Harbors Division, Department of Transportation, State of Hawaii according to the most recently available property deed records. Some of the property is leased to transportation companies, fuels suppliers, materials providers, and other commercial ventures.

This assessment was conducted to determine whether conditions or situations at the site might result in present real or potential hazards, or environmental liabilities as dictated by federal, state, and local statutes and regulations. This investigation is also intended to identify areas of potential contamination that may be encountered during construction planned for future expansion of the harbor operations. Specific items investigated included: present and historical uses of the properties; signs of gross surface contamination; the presence of hazardous materials and wastes; above ground and underground storage tanks (ASTs and USTs), and other indications of the presence of chemical contamination. These conditions may exist either on the subject property or on nearby properties to constitute an environmental liability to the owners of the property.

A review of the environmental regulatory databases indicated the following:

- No U.S. EPA or state Superfund sites are located within a one-mile radius of the subject property;
- No CERCLIS sites are located within a half-mile radius of the subject property;
- No RCRA treatment, storage, and disposal facilities are located within a half-mile radius of the property;
- No RCRA corrective action sites were identified within a one-mile radius;
- One RCRA small generator is located within a quarter-mile of the property, and no large quantity generators are located within that search radius. The SQG, the TOSCO Kawaihae Terminal, was not found to have any reported incidents or violations of hazardous waste regulations;

- Two sites with underground storage tanks are located within a quarter-mile of the property. One of these sites was found to be a source of leaked or spilled petroleum products, however the extent of the contamination is unknown;
- One leaking underground storage tank facility is located within a half-mile radius of the property. This site underwent a partial clean up of soil contamination, however some additional site remediation was required by the State Department of Health according to government records on this property. No record of the additional remediation work having been done was found;
- No active landfills are located within a half-mile radius of the property; and
- One spill incident connected with the property was entered on the ERNS database. This spill occurred on September 30, 1993 and involved the release of approximately 2 pounds of hydraulic oil from a boat in the harbor. The spilled material was cleaned up and no long-term environmental liability should come as a result of the incident.

A site reconnaissance at the property, performed on August 10, 2000 found only one observable, adverse environmental condition connected with the property. This refers to the Akana Petroleum site that has spilled petroleum product on the surface of the soils in their property. The site is bermed to prevent surface run-off of the oils, however no information on the presence of a liner to prevent ground water contamination was found. The harbor property contains several operations that may also potentially contribute to adverse environmental conditions, however, records available at the time of this report did not reveal any problems identified to date. These operations include approximately 15 large, above ground petroleum storage tanks, dockside petroleum unloading facilities, and pipelines for transporting the petroleum product to the storage tanks. Any of these facilities may have leaked causing soil and ground water contamination.

Based on the available information reviewed, RMTC concludes that the only significant potential for environmental liability on this property is the presence of the underground storage tanks, above ground petroleum storage tanks, associated piping and loading facilities and surface contamination present at the Akana Petroleum property. RMTC recommends that additional environmental investigation be undertaken if excavation or earthwork are proposed for the identified areas. These investigations would involve the determination of the extent and concentration of petroleum hydrocarbons in work areas. If identified, these contaminated materials would require proper management, treatment or disposal, and proper worker protection during the work.

1.0 INTRODUCTION

The R. M. Towill Corporation (RMTC) has been retained by the Harbors Division, Department of Transportation, State of Hawaii to perform a Phase I - Environmental Site Assessment (ESA) for the Kawaihae Harbor, identified on Tax Map Key (TMK) Plat Map # (3)-6-1-3. The property is located on Kawaihae Road near the village of Kawaihae in the South Kohala District on the northeast side of the Island of Hawaii in the State of Hawaii.

This report details the work performed to identify the presence of significant, adverse environmental liabilities associated with this site. Throughout this ESA the parcel of interest will be referred to as *the subject property or the property*.

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment was to investigate past and present land uses of the subject property and surrounding areas to determine if the potential for hazardous materials contamination exists. This site assessment is being performed as a part of the Environmental Impact Statement for the Hawaii Commercial Harbors 2020 Master Plan. The Master Plan describes the plans for the development of the harbor properties over the next 20 years. Specific attention was paid to the areas of the property that are scheduled to be impacted during the planned expansion activities.

1.2 Scope of Work

This assessment was performed in accordance with American Society for Testing and Materials (ASTM) Standard: E 1527-00, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process". The ASTM Standard defines customary practice for conducting environmental site assessments of a parcel of commercial real estate with respect to contaminants within the scope of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and to petroleum products. Adherence to these guidelines is intended to limit liability of property owners from inherited environmental contamination.

RMTC performed the following tasks:

- Reviewed available documents including maps and aerial photographs to assess past land use at the property;
- Conducted an environmental records review and contacted local and State agencies to determine the regulatory history associated with the property;
- Conducted site reconnaissance to assess present site conditions;
- Reviewed site geology and hydrogeology; and

- Prepared this Phase I Environmental Site Assessment Report which documents the findings of this evaluation.

This assessment is based on information that has been provided to RMTc by applicable agencies and individuals. Conclusions and recommendations are drawn from the cumulative findings of the aforementioned sections.

1.3 Limitations

The conclusions presented in this report are professional opinions based solely upon visual observations of the sites and their respective vicinities, and our interpretation of the available historical information and documents reviewed. They are intended exclusively for the purpose outlined herein and at the site location and project indicated. The scope of services performed in execution of this investigation may not be appropriate to satisfy the needs of other users, and any use or re-use of this document or the findings, conclusions, or recommendations presented herein is at the sole risk of said user.

R. M. Towill Corporation's services are performed, within the limits prescribed by its Clients, with the usual thoroughness and competence of the consulting profession, in accordance with the standard for professional services at the time those services are rendered. No warranty or representation, either expressed or implied, is included or intended in its proposals, contracts, or reports.

Opinions and recommendations presented herein apply to site conditions existing at the time of our investigation and those reasonably foreseeable; they cannot necessarily apply to site changes of which this office is not aware and has not had the opportunity to evaluate.

2.0 SITE DESCRIPTION

2.1 Location and Legal Description

The property consists of approximately 28 parcels of land in the TMK Plat Map # (3)-6-1-3 (Figures 1 and 2) located near the village of Kawaihae on the leeward side of the island of Hawaii. The property is along Kawaihae Road at Kawaihae Bay. The total area of the properties is approximately 100 acres.

According to the U.S. Geological Survey topographic map of the area (Kawaihae Quadrangle), the property is located at approximately 20° 2' 24.0" North latitude and 155° 49' 54.5" West longitude. The property is located in the village of Kawaihae in the South Kohala District on the island of Hawaii in the State of Hawaii, along the Pacific Ocean at Kawaihae Bay. The site is generally flat and located below an elevation of 30 feet above sea level.

Property records indicate that the current owner of the property is Harbors Division, Department of Transportation, State of Hawaii.

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2.2 Site and Vicinity Characteristics

2.2.1 Geologic Setting and Soils

The property is located near the village of Kawaihae, on the shoreline of the Pacific Ocean at Kawaihae Bay on the island of Hawaii. The harbor is situated at the base of the Kohala Mountain range on the northeast portion of the island. The soils at the site are in the Kawaihae Series (KOC) described by the US Department of Agriculture Soil Conservation Service as very rocky, very fine sandy loam at 6 - 12 percent slopes. The area is severely eroded in which small gullies are forming and the vegetation is sparse. The Kawaihae series consists of somewhat excessively drained extremely stony soils that formed in volcanic ash. These soils have a very thin surface layer of fine sandy loam over silt loam and loam. The annual rainfall is 5 - 20 inches per year, falling mostly in the winter months.

2.2.2 Groundwater

The property is situated makai or towards the ocean of the underground injection control (UIC) line, according to the Hawaii Department of Health Underground Injection Program Map from 1982. This indicates that the ground water at the site is not used for drinking water. Due to the proximity to the ocean, the water likely has a high salt content and would not be considered to be potable. Ground water on the site is expected to be at or slightly above sea level.

There are five water wells located within a mile of the property. These wells are all located upgradient of the subject property and therefore will not likely be affected by the site activities. The use of these wells is not known at this time. According to the State Department of Health, there are three injection wells and three other wells located either on the harbor property or immediately adjacent to the site. These wells are likely permitted for disposal of septic sewage or other waste water systems.

Based on this information, any impacts to the ground water from on-site or off-site operations are not likely going to have significantly affect future uses of the ground water at the property or to affect any drinking water uses nearby.

2.2.3 Surface Waters

The harbor property contains two streams that flow from the Kohala Mountains from the east to the ocean at the port. One of these streams flows only when there is rainfall in the vicinity and is a dry drainage for most of the year. The other stream flows to the south of the harbor across harbor properties. This stream will have to be managed in accordance with state and federal regulations during future construction activities.

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Kawaihae, Hawaii

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2.2.4 Site Flood Boundaries

A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (Community Panel Number 155166 0137, revised May 3, 1982) indicates that the coastal areas of the harbor property fall within a Coastal High Hazard Area. This designation indicates the potential for flooding during storm events and during times of high surf coming from the west in areas along the shoreline. The areas at the base of the gulches in this area are also considered to be within the 100 year flood boundary. During times of extremely wet and rainy weather, these areas may flood from water flowing down the mountain towards the ocean. Other areas of the site have not been determined for the flood hazard.

2.3 Current Uses of Property

The site consists of an active state harbor operation, leased lands for a variety of uses, and undeveloped land. The area is flat, surrounded by the ocean on the west, mixed residential and agricultural lands to the north and south, and undeveloped lands up the hillside of the Kohala Mountains to the east. Several of the harbor properties are leased for fuel storage, blending, and distribution facilities; shipping container loading and storage, cement mixing and loading, and sugar product loading and storage facilities. A coral rock landfill created to place dredged harbor materials is now the site of a rock excavation and loading operation operated by C. Brewer. A landing spot along the harbor is owned by the U.S. Army for training operations. The landing is connected to a small staging area and a dirt road leading to the interior of the island. The total area of the Army property is 24 acres. Other adjacent lands are used for a canoe club, small boat harbors maintained and operated by the State Department of Land and Natural Resources, and a campground. A National Historical Site, the Puu O Kohola Heiau, is located just to the south of the harbor property.

3.0 ENVIRONMENTAL RECORDS REVIEW

In order to identify the presence of adverse environmental conditions at the subject property, several published sources of environmental records were searched. This section lists environmental databases that were searched and the results of each search. Important entries of each database are listed in the following sections.

3.1 Agency Lists Reviewed

A review was performed of the environmental regulatory databases (all updated within 90 days of search, or at most recent update available) required by ASTM methodology at the respective search distances specified by the methodology.

3.2 Federal Database Search Results

3.2.1 USEPA National Priorities List

The National Priorities List compiled by the U.S. Environmental Protection Agency lists the Superfund Hazardous Waste Sites as required by federal law. The identification of the hazardous waste sites presenting the greatest risk to human health and the environment (in the U.S.) is mandated by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) passed in 1980. This list is prioritized according to the severity of the risk to public health and the environment.

There are no NPL sites located within one mile of the subject property.

3.2.2 USEPA RCRA TSD Facilities List

The EPA maintains a list of Treatment, Storage, and Disposal (TSD) Facilities that either treat, store or dispose of hazardous waste as defined by the hazardous waste regulations published by the EPA according to the Resource Conservation and Recovery Act (RCRA). This information is contained in the Resource Conservation and Recovery Information System (RCRIS).

There are no TSD facilities located within a half of a mile of the Kawaihae Harbor.

3.2.3 USEPA RCRA CORRACTS List

The RCRA CORRACTS or Corrective Action Report, lists those facilities that generate, treat, store, or dispose of hazardous wastes that have undergone remediation activity. These sites have experienced spills or releases of hazardous chemicals prompting the need for clean up action. The extent and type of contamination is listed in this report as well as the status of the corrective actions.

There are no hazardous waste facilities located within one mile of the subject property that have undergone corrective action according to this report.

3.2.4 USEPA CERCLIS List

The CERCLIS List, or Comprehensive Environmental Response, Compensation, and Liability Information System contains data on potentially hazardous waste sites that have been reported to the EPA by states, municipalities, private companies, and private persons. These sites are considered for possible clean up activities or inclusion onto the NPL.

There are no entries on the CERCLIS for properties within a half of a mile of the subject property.

3.2.5 USEPA ERNS List

The Emergency Release Notification System list, compiled by the US EPA, lists the locations and other data on reported releases of oil and hazardous substances. All releases in excess of threshold quantities are required to be reported and included in this list.

The only entry to the ERNS on the subject property was the following reported release.

Location	Details of Reported Incident
Kawaihae Port	On September 30, 1993, 2 pounds of hydraulic oil were spilled from the ship the M/V Sgt William R. Button when a hydraulic hose ruptured. A boom was deployed and the oil cleaned up. No further action was required.

3.2.6 USEPA RCRA Generators List

The EPA tracks all facilities that generate hazardous wastes in excess of threshold quantities set in the RCRA regulations. RCRA large quantity generators (LQG) are those that produce in excess of 1000 kilograms of hazardous waste per month, and small quantity generators (SQG) are those that produce greater than 100 kg per month but less than 1000 kg per month.

The following hazardous waste generators were the only facilities listed on the EPA RCRA list within a quarter of a mile of the harbor property.

Facility / Location	Generator Status	Other Information
Tosco Kawaihae Terminal	SQG	No violations of hazardous waste regulations were found.
King Kona Productions Inc.	SQG	This operation was on land leased to a movie production company for use during movie filming in 1995. No violations of hazardous waste regulations were noted.

3.3 State and Local Database Search Results

3.3.1 State of Hawaii Hazardous Waste Sites

This list includes all facilities, sites, or areas in which the Office of Hazard Evaluation and Emergency Response has an interest, has investigated or may investigate under Hawaii Revised Statutes.

There are no State-recognized hazardous waste sites within a mile of the subject property.

3.3.2 State of Hawaii Landfill Sites

The state list of Solid Waste Facilities and Landfill Sites contains an inventory of solid waste disposal facilities or landfills in the state. These facilities may be active or inactive or open dumps that failed to meet RCRA criteria for proper solid waste landfills.

There are no state recognized landfills or disposal sites within a half of a mile of the harbor properties.

3.3.3 State of Hawaii UST List

This list of registered underground storage tanks is administered by the State of Hawaii UST division. All tanks that are registered as required by the federal RCRA regulations are contained on this list. The database also includes the number and types of tanks registered, the regulatory status of the tanks, and whether they have been removed and closed according to state law.

There were two underground storage tank sites listed in the State of Hawaii list of registered USTs located within a quarter of a mile of the site.

Facility / Location	No. and Types of USTs	Regulatory Status
Young Brothers, Ltd. Kawaihae Wharf Approach Rd.	1 - 600 gallon gasoline tank installed 1966	Tank was taken permanently out of use. No information on the closure and removal was available.
Kawaihae Service Akoni-Pule St.	3 - 3000 gallon tanks, gas and diesel	All tanks are permanently out of use. Remedial action is pending due to soil contamination detected during closure.

3.3.4 State of Hawaii Leaking UST List

The state Department of Health Underground Storage Tank Division records the location and regulatory status of all sites in which leaking underground storage tanks have been identified. There was only one leaking underground storage tank site identified within a half of a mile of the subject property. Information on this site was reviewed from the Department of Health files to determine the current status of the site clean up activities. The results of this records review are summarized on the following table.

Facility Location	Records Searched	Status of Site
Kawaihae Service (corner of Kawaihae Wharf Rd and Akoni-Pule Rd.)	Leaking Underground Storage Tanks (LUST)	In 1980, a leak in one of the fuel tanks was detected and the tank was replaced. In 1998, during removal of tanks, a release was identified and reported. In 1999, the DOH required additional clean up of the site and no record of the clean up activities was found.

3.4 Historical Use of Property

The following information was reviewed pertaining to the historical uses of the harbors properties and the surrounding area.

3.4.1 Aerial Photographs

Aerial photographs obtained from the R. M. Towill Corporation Photogrammetry Department for the property from the years 1949, 1966, 1977, and 1990 and examined for evidence of previous site usage.

In the 1949 photograph, the harbor site is mostly undeveloped. Only a few small houses are present on the photograph. The town of Kawaihae has approximately 20 structures, and the harbor site has about 5 houses. No industrial or commercial uses of the harbor property are evident in this photo.

In the 1966 photo, the harbor operations have been developed. The harbor is cleared and the "coral flats" area over the ocean has been filled in with the harbor dredgings. The entire property from the highway to the piers is filled in with the coral dredgings. The harbor appears to be developed primarily for sugar loading and storage and petroleum handling. Large structures were constructed for the handling and loading of sugar products. Several large aboveground storage tanks are present on the north end of the site. While some of these tanks appear to be for the storage of molasses, some also appear to be used for petroleum products. The small boat harbor on the north end of the site has been built, but the small boat harbor on the south end of the property has not yet been developed. The small fisheries area currently present within the harbor at the delta of a small drainage was not built at the time of this photo.

In the 1977 photo, the harbor operations have expanded onto previously undeveloped areas of the property. A new set of petroleum aboveground storage tanks is present in the middle of the property at the present Akama Petroleum site. The coral flats area has been expanded a little since the 1966 photo and a coral mining operation is underway to remove some of the coral piled on the site. The fisheries area of the harbor has been formed with the coral dredgings.

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In the 1990 photo, both the inter-island and the international shipping areas of the harbor have been constructed, and there is a considerable amount of container storage on the site. The current site of the small boat harbor on the south side of the harbor property has not yet been developed at the time of the photo. No additional fuel storage facilities have been constructed from the 1977 photo. Much of the site appears as it does today with respect to the major uses of the property. The military landing site is present in this photo, however no permanent land based structures are visible on the military property.

3.4.2 Historical Use Information

The historical use of the Kawaihae Harbor property was documented through a review of several books, files, and reports, and the inspection of several historical photographs. The references used are listed in Section 7.0.

The harbor property was developed in the early 1960's to address the need for commercial shipping access to the western side of the island of Hawaii. The eastern portions of the island were served by the Port of Hilo for many years, but new development in the Kona and Kohala Districts prompted the need for another harbor on the leeward side. The 1950 Rivers and Harbors Act authorized the construction of the Kawaihae Harbor by the US Army Corps of Engineers. Construction was completed in 1962.

In 1969 - 70, the USACOE undertook Project Tugboat to build a small boat harbor immediately to the south of the harbor. The project was performed by the Nuclear Cratering Group involving the use of chemical explosives and ammonium nitrate, to create a row crater to excavate the harbor and entrance to the facility. This phase of the project was completed in late 1970 after clearing the harbor areas and constructing an 850-foot breakwater to shelter the harbor basin. One history of the site referred to the use of nuclear weapons during this operation. Further discussions and research found that only chemical explosives were used.

Direct barge service to Kawaihae began in 1982. Also in that year, the channel and turning basin were deepened to a depth of 40 - 53 feet. In 1983, a 2,400 square foot shed was built for the storage of perishable farm products awaiting barge shipments. In the fall of 1986, an inter-island container company began operation. In 1992, a half acre of cargo handling yard was added to the overseas cargo area, and 1 acre of the container yard was paved for inter-island cargo.

Also in 1992, there was a 550 foot extension of the overseas pier along with dredging to increase the draft in front of the facility, construction of a 38-foot extension of the marginal wharf, demolition of the existing dock, and the construction of a new 40-foot loading dock and two dinghy storage racks.

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4.0 SITE RECONNAISSANCE

4.1 Site Inspection

On August 10, 2000, David Gerow of RMTC visited the Kawaihae Harbor to assist in the identification of the presence or potential for presence of any adverse environmental conditions on the property. This inspection also included an interview with the Marine Cargo Specialist at the site, Henry Pasco (see Section 4.2). Mr. Pasco is a long time employee of the Harbors Division at this location.

A visual inspection of the Kawaihae Harbor property did not reveal any visible signs of surface contamination, except for areas near above ground storage tanks at the Akana Bulk Fuel Facility. There were areas that appeared to be stained with oil or other petroleum products. This area is largely contained with a concrete berm and is not anticipated to contribute to the surface contamination of other areas of the property. No information was available on whether the site is lined to prevent contamination of ground water.

Other conditions noted during the site visit that may represent environmental concerns include:

- A total of approximately 15 aboveground petroleum storage tanks are located on lands leased from the State of Hawaii Department of Transportation Harbors Division by oil and gasoline distributors. Several of these tanks were situated in concrete bermed areas to collect any spilled product on the ground. Due to the age of several of the petroleum facilities, it is possible that leaks and spills of the petroleum product may have contaminated the soils under the tanks or the groundwater in the area. Some of the tanks and facilities have been upgraded to current standards. An additional review of the status of these facilities may be required to fully assess the potential liability of the operation of these facilities.
- The Akana Petroleum Facility takes gasoline from the Hilo Port facility and blends it into different grades of gasoline. There were oil stains on the surface soils within this compound.
- There are several petroleum pipelines running from the piers to the petroleum storage tanks. These pipelines were not visible at the time of the inspection and have the potential to have leaked and caused soil and ground water contamination.
- The gasoline station at the corner of Akone-Pule Road and Kawaihae Road is immediately adjacent to harbor properties. A release of petroleum was reported for this site and a clean up has not been completed. There is a possibility that this contamination has migrated onto harbor property.

4.2 Interviews

On August 10, an interview with the Marine Cargo Specialist at the harbor, Mr. Pasco was performed. During that interview Mr. Pasco was asked about his knowledge of any environmental incidents or conditions on the property. Mr. Pasco has been employed at the port for a number of years, but he was unaware of any spills, leaks or other incidents. He was asked if he was aware of the use of nuclear explosives during the excavation of the small boat harbor and he was unaware of any such program. The Operation Tug Boat work was done prior to his starting work at the harbor.

5.0 FINDINGS AND CONCLUSIONS

RMTC has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Standard E 1527-00 for the property identified as TMK # (1)-1-6-15-6. This assessment has revealed the presence of several conditions that may present significant environmental liability to the property owners and operators and may affect the manner in which future development of the site may occur. The significant findings of this report include:

- Several of the harbor properties have been leased to facilities that store, transport by pipeline, and distribute petroleum products. These facilities include the Tosco Terminal and the Akana Petroleum, Inc. sites. Both of these sites have large above ground storage tanks with a significant amount of fuel storage. While there are no records of releases at either of these sites, surface staining was noted at the Akana site during the site inspection. Excavation work that may be undertaken in the area of these tanks should be performed with due precautions for worker and environmental protection.
- The petroleum storage facilities mentioned also are connected to the piers with sub-surface piping systems that carry the product from the ships to the tanks. No evidence of any sub-surface investigations was found to determine whether any leaks have occurred from these piping systems. Prior to any excavations in the area of these pipelines, additional investigation activities may be required to identify whether soil contamination will be encountered.
- The Kawaihae Service station located at the corner of the Kawaihae Rd. and Akoni-Pule Road had a release of petroleum identified during the removal of an underground storage tank. While the State of Hawaii Department of Health has requested that the contamination be characterized and remediated, no record of this work being performed was found. The possibility exists that this contamination has migrated onto harbor property.
- Buildings materials used to construct the structures on the site may contain lead-based paint and asbestos. No samples were taken during this assessment to verify the presence of either of these contaminants. If buildings are to be demolished, samples should be

taken to identify the presence of lead and asbestos. If present, proper precautions should be taken to mitigate worker exposures and environmental impacts from these materials.

No other environmental conditions were observed at the subject property or noted during the records review for this site.

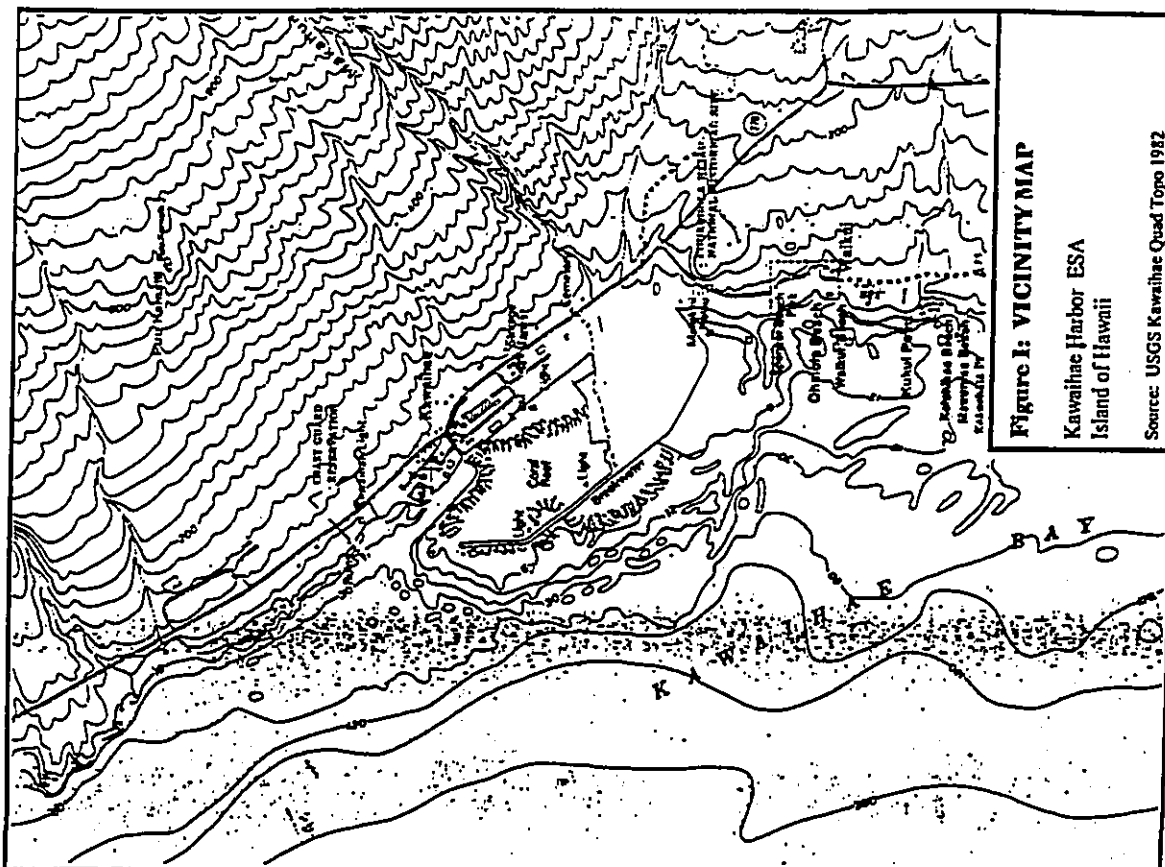
6.0 SIGNATURES

The Phase I Environmental Site Assessment was performed by Mr. David Gerow of R. M. Towill Corporation.

David Gerow 11/14/00
Date
David Gerow, CH, CSP

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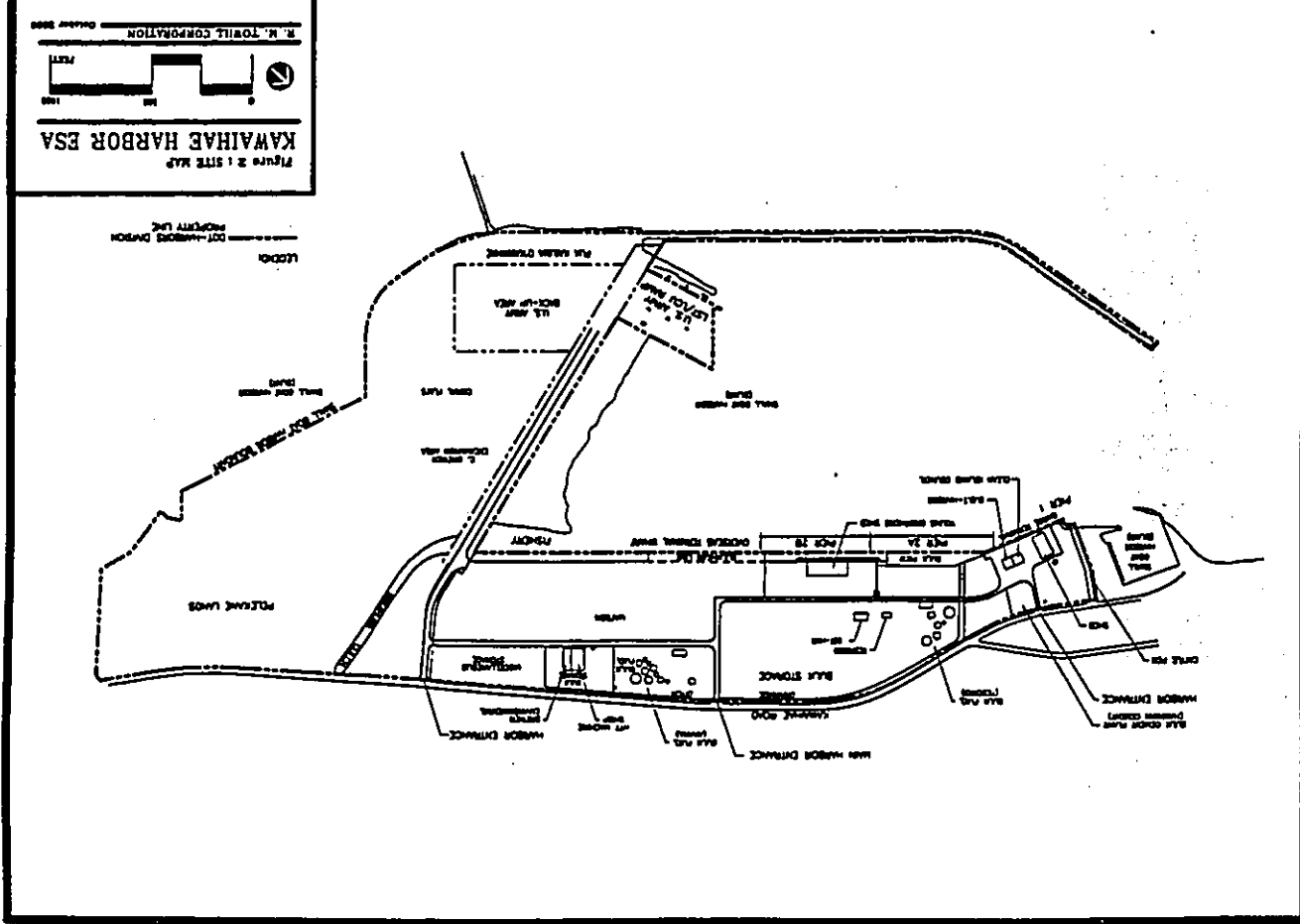


APPENDIX A

FIGURES



APPENDIX B
PHOTODOCUMENTATION



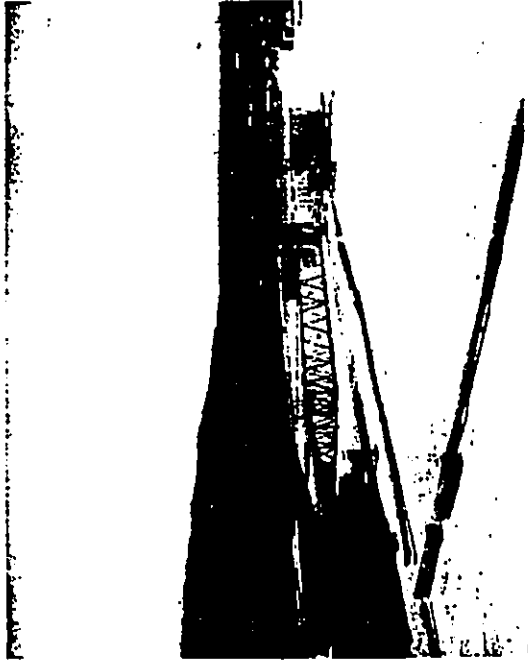


Photo 3: Equipment storage yard

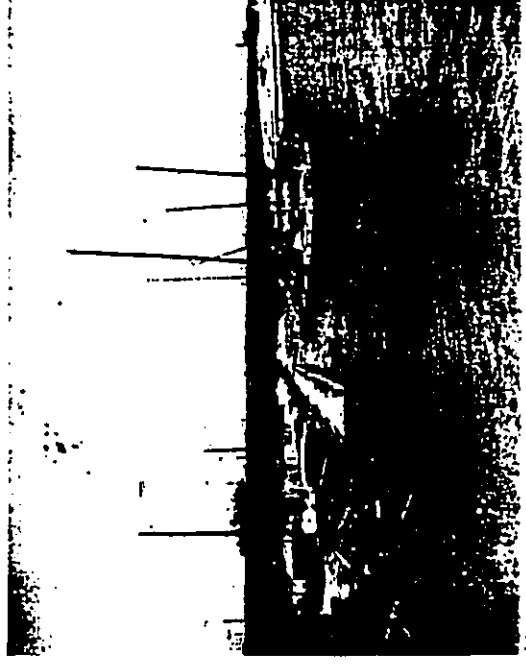


Photo 4: Pier 2B Small boat dock



Photo 1: Container yard



Photo 2: Pier 1 looking south



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Photo 5: Akana Petroleum storage tanks

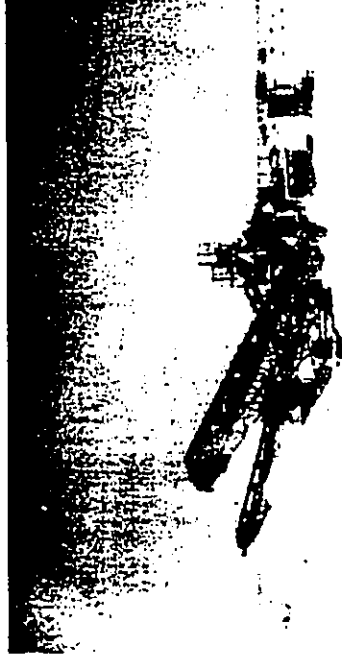


Photo 6: Brewer culvert rock excavation site

Appendix H

**ARCHAEOLOGICAL INVENTORY SURVEY
HILO HARBOR FACILITIES EXPANSION**

Haun & Associates

October 2000

Report 009-090100

**ARCHAEOLOGICAL INVENTORY SURVEY
HILO HARBOR FACILITIES EXPANSION
TMK: 3-2-1-09: 2, 12, 41, 42 AND TMK: 3-2-1-07: 20-37
LAND OF WAIAKEA, SOUTH HILO DISTRICT
ISLAND OF HAWAII**

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and
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October 2000

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**ARCHAEOLOGICAL INVENTORY SURVEY
HILO HARBOR FACILITIES EXPANSION
TMK: 3-2-1-09: 2, 12, 41, 42
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SUMMARY

At the request of R.M. Towill Corporation, Haun & Associates conducted an archaeological inventory of two parcels: (a) a 14-acre parcel (TMK: 3-2-1-09; 2, 12, 41, 42) and (b) a 6-acre parcel (TMK: 3-2-1-7; 20-37) at Hilo Harbor, in the Land of Waialea, South Hilo District, Island of Hawaii. The objective of the survey was to satisfy historic preservation regulatory review requirements of the Department of Land and Natural Resources-Historic Preservation Division (DLNR-HPD), as contained within Hawaii Administrative Rules, Title 13, DLNR, Subtitle 6, State Historic Preservation Rules.

Both parcels have been extensively altered by 1980s mechanical clearing and development. No pre-historic archaeological sites were identified. The eastern project parcel contains a recent asphalt pavement and the western project parcel contains a complex of historic structural remains. The remains, designated Site 22486, probably are the remnants of a U.S. Engineer facility dating in between 1908 and the 1910s.

Site 22486 is assessed as solely significant under Criterion "d". The site has yielded information important for understanding historic land use in project area. The mapping, written descriptions, and photography at the site adequately documents it and no further work or preservation is recommended.

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INTRODUCTION

This report presents the results of an archaeological inventory survey conducted at two parcels in Hilo Harbor (TMK: 3-2-1-09-2, 12, 41, 42, and TMK: 3-2-1-07-20-37), land of Waialea, South Hilo District, island of Hawaii (Figure 1). The objective of the survey was to satisfy current historic preservation regulatory review inventory requirements of the Department of Land and Natural Resources-Historic Preservation Division (DLNR-HPD), as contained within Hawaii Administrative Rules, Title 13, DLNR, Subtitle 6, State Historic Preservation Rules (DLNR 1998).

The survey fieldwork was conducted on September 1, 2000. Described in this final report are the project scope of work, field methods, and survey findings. Also included is background information relevant to the project area, and significance assessments of the sites with recommended further treatments.

Scope Of Work

Based on DLNR-HPD rules for inventory surveys the following specific tasks were determined to constitute an appropriate scope of work for the project:

1. Conduct background review and research of existing archaeological and historical documentary literature relating to the project area and its immediate vicinity—including examination of Land Commission Awards, *ahupua'a* records, historic maps, archival materials, archaeological reports, and other historical sources;
2. Conduct a high intensity, 100% pedestrian survey coverage of the project area;
3. Conduct detailed recording of all potentially significant sites including scale plan drawings, written descriptions, and photographs, as appropriate;
4. Conduct limited subsurface testing (manual excavation) at selected sites (a) to determine the presence or absence of potentially significant buried cultural deposits or features, and (b) to obtain suitable samples for radiocarbon age determination analyses;
5. Analyze background research and field data; and
6. Prepare and submit Final Report.

Project Area Description

The current project consisted of the examination of two parcels totaling approximately 20-acres, located at Hilo Harbor. The parcels are referenced as the East and West Project Areas in this report. Rainfall in this area is c. 150 inches per year with an annual temperature range from 74 to 80 degrees (Juvik and Juvik 1998).

The East Project Area is a c. 14-acre parcel located on the eastern side of the Naval Reserve Electronic Facility. This portion of the project area is bounded by Kalaniana'ole Avenue on the south, by an unpaved road on the east and northeast, by the harbor and the Hilo Breakwater on the north and northwest, and by other harbor facilities on the west. Approximately 58% or 8.1-acres of the East Project Area has been mechanically altered. A 2.66-acre lot within this parcel is occupied by the Aloha Petroleum Company and a 2.6-acre lot to the northwest is occupied by large tanks and several buildings. The entire ground surface in these areas has been leveled and paved with crushed gravel where tanks or buildings are not present.

The remaining 2.84-acres of the disturbed area has apparently been bulldozed (Figure 2). The ground surface in this area is also level, though it is currently not in use. Several piles of gravel, boulders, and debris are located in this area. An asphalt pavement with an adjoining driveway, discussed in the Findings Section of this report, is also located within the disturbed area. The vegetation in this area consists of tall grasses and ferns, with scattered false koa (*Acacia koa*), *Leucaena leucoccephala* (Lam.) de Wit, papaya (*Carica papaya* L.), small mango trees (*Mangifera indica* L.), ironwood trees (*Casuarina equisetifolia* L.), and hibiscus (*Hibiscus* spp.).

The remaining 42% or 5.9-acres within the East Project Area is occupied by a series of residential structures consisting of wooden and plastic tarp shelters (Figure 3). There are approximately 12 shelters within this portion of the project area, and additional ones are located adjacent to the project area to the east. Several of the structures are constructed on stone foundations that appear to be modern. Large amounts of trash and debris are scattered throughout this portion of the East Project Area.

The terrain in this portion of the East Project Area is uneven and irregular, consisting of Keaukaha extremely rocky muck (6-20% slopes). This soil series is characterized by either pahoehoe outcrops occupying at least 25% of the surface, or a thin layer of very dark brown muck over lava bedrock (Sato et al. 1973). Vegetation in this area is comprised of large mango trees, guava (*Psidium guajava* L.), coconut (*Cocos nucifera*), taro (*Colocasia esculenta* (L.) Schott), plumeria (*Plumeria arcuata* Ait.), pandanus (*Pandanus odoratissimus* L. f.), and dense vines and ferns.

The West Project Area is a 6-acre parcel situated on the western side of the harbor facilities. The parcel is bounded on the south by Ocean View Drive, on the north by Kuhio Bay, on the east by a chain link fence, and on the west by an undeveloped lot. The western two-thirds of this area is occupied by leasehold house lots (Figure 4). There are 22 lots in this area, and all except one have a residence on them.

The remaining portion of this area consists of a densely vegetated tract that measures c.2-acres in size (Figure 5). A concrete slab complex, discussed in a following section, is located in this area. The area is relatively level and was likely once bulldozed. Numerous bulldozed piles of soil and rock are scattered throughout the area. Modern trash and debris is also present. The soil in this area is also the Keaukaha extremely rocky muck, though fewer exposed outcrops are present. Vegetation consists of a large banyan tree (*Ficus benghalensis* L.), coconut, hibiscus, mango, pandanus and vines.

Field Methods

The undeveloped portions of the project area were subjected to 100% surface examination with surveyors paced at 10 to 15 m intervals depending on vegetation density. In the East Project Area, the transects were oriented in a roughly northwest/southeast direction, and in the West Project Area, they were oriented east-northeast by west-southwest. The remaining portions of the survey areas were examined by surveyors walking the perimeters of the developed areas.

Sites were flagged with pink and blue flagging tape and their locations plotted on a scaled project area map. The sites were recorded in detail, which consisted of preparing scaled plan maps, the completion of standardized site/feature forms and photographic documentation. No subsurface testing was undertaken during the current study because the ground surface consists of lava bedrock. Where soil is present, it is either imported fill or only a few centimeters of organic muck. Extensive ground-altering disturbance is evident throughout both project parcels.

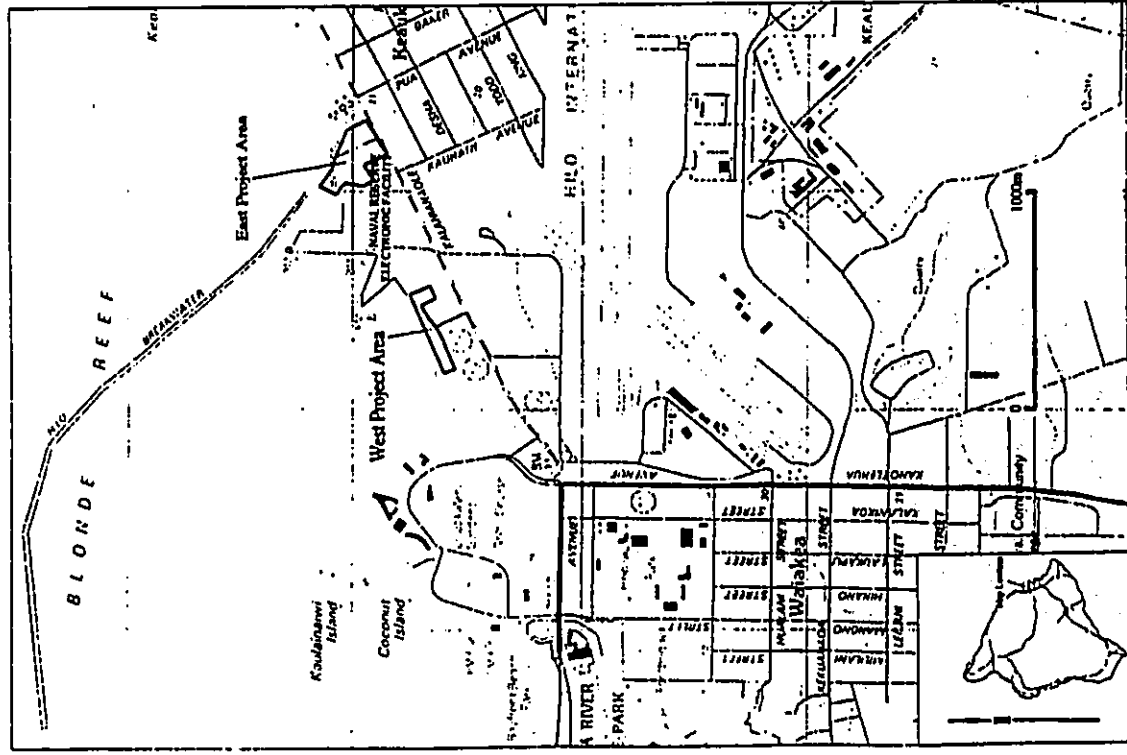


Figure 1. Portion of USGS Hilo Quadrangle Showing Project Areas



Figure 2. East Project Area - Secondary Vegetation, View to South



Figure 3. East Project Area - Temporary Shelter and Vegetation, View to West



Figure 4. West Project Area - Developed Portion, View to West-Southwest



Figure 5. West Project Area - Undeveloped Portion, View to Northeast

ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Historical Documentary Research

Archival research was conducted at the University of Hawaii-Hilo Hawaiian Collection, the Land Survey Office and the Archives Division of the Hawaii Department of Accounting and General Services, DLNR-IPD files, and the Hawaii State Public Libraries in Honolulu and Hilo.

The project area is situated in the *ahupua'a* of Waiakea in South Hilo District. The *ahupua'a* is one of the largest in the district covering over 95,000 acres. The *ahupua'a* extends along the coast from the west side of Hilo Bay to the Puna District boundary and inland to approximately 6,000 ft elevation. Much of the following is summarized from *Hilo Bay: A Chronological History* (Kelly et al. 1981), an extensive and thorough compendium of historical information about Hilo including Waiakea.

Hawaiian traditional and legendary accounts attest to the longstanding importance of Waiakea. The chief of the Hilo region, Kuliuku'u, who resided in Waiakea, was the first conqueror of Umi-a-Liloa in his campaign to unify the districts of Hawaii Island. Hilo with its large bay, fishponds, wet taro fields, and abundant freshwater was a population center for commoners and royalty. Kamehameha I and his court resided in Hilo in the 1790s. In preparation for his planned invasion of Kauai in 1802, Kamehameha built a canoe fleet at Hilo, reportedly consisting of 800 vessels. Kamehameha gave his favorite wife, Ka'ahumanu, the *ili* *ahupua'a* of Pi'opi'o in Waiakea.

Early historic accounts also document the importance of Hilo. In 1823, Ellis estimated the population to be 2,000 people in 400 houses. Ellis described the extensive use of *lauhala* thatch in house construction in Hilo. Lauhala was gathered from eastern Waiakea beyond the Waioa River. He described the land as intensively cultivated with plantains, bananas, sugar cane, taro, potatoes, melons, coconuts, and breadfruit. Wet taro was grown in mounds (*kipi*) in marshlands. Hilo was a center for trade between the people of Ka'u, Hamakua, and Hilo. Between the 1790s and 1820s, sandalwood was cut and brought to Hilo for export. *Pulu* and *pihi* (arrowroot) were also exported. Ellis also describes coastal fishing.

In 1824, a missionary station was established in Waiakea. Soon after, churches and schools were established. Whaler's began stopping at Hilo in the mid-1820s. In the 1830s, a sawmill was built, and two stores were opened. By the end of the decade, a sugar cane plantation and mill were established on Pona-hawai lands. In 1840, the Wilkes Expedition arrived in Hilo and constructed an observatory on Waiakea Point on the east side of Hilo Bay.

The Waiohona 'Aina database (2000) lists 51 parcels claimed by 37 claimants within Waiakea in the mid-1800s (Table 1). All claims are for parcels situated southwest of the project area at the coast and immediately inland along the lower reaches of the Waioa River less than 0.5 mi inland. Twenty-six parcels were awarded to 24 claimants. Chiefless Kamamulu was awarded the entire *ili* of Pi'opi'o under Land Commission Award (LCA) No. 7713 (Figure 6). The remaining claims are for *Aulana* parcels ranging from 0.24 to 13.14 acres in area with an average of 3.6 acres. All, except five claims, were for single parcels. The testimonies for several awarded *Aulana* include claims for parcels that were not awarded.

The claim testimonies refer to 18 *ili* land divisions. Five *ili*: Kalonoho, Alenoho, Kolia, Pi'opi'o and Paeahu, are mentioned ten or more times and apparently were linear strips of land extending inland from the coast. *Ili* Kalonoho was situated next to the western *ahupua'a* boundary with Kukuu. Alenoho was the next *ili* to the east followed by Kolia, Pi'opi'o and Paeahu. The latter two *ili* bordered the west bank of Waioa River and Fishpond. Six *ili* for LCAs on the east side of the river, from the river mouth inland, consist of Kamakola, Keawe Kapu, Kiahoa, Hinauauwai, Puhua, and Kanahana. Kaliahi was situated inland between Alenoho and Kolia. The geographic location of the remaining *ili* cannot be determined because they are mentioned in testimony for claims that were not awarded.

LCA	Claimant	Award	Parcel	Area	Acres	Notes
1	Kolonoho	1	1	1	1	
2	Alenoho	1	1	1	1	
3	Kolia	1	1	1	1	
4	Pi'opi'o	1	1	1	1	
5	Paeahu	1	1	1	1	
6	Kamakola	1	1	1	1	
7	Keawe Kapu	1	1	1	1	
8	Kiahoa	1	1	1	1	
9	Hinauauwai	1	1	1	1	
10	Puhua	1	1	1	1	
11	Kanahana	1	1	1	1	
12	Kaliahi	1	1	1	1	
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Table 1. Land Commission Award Claims

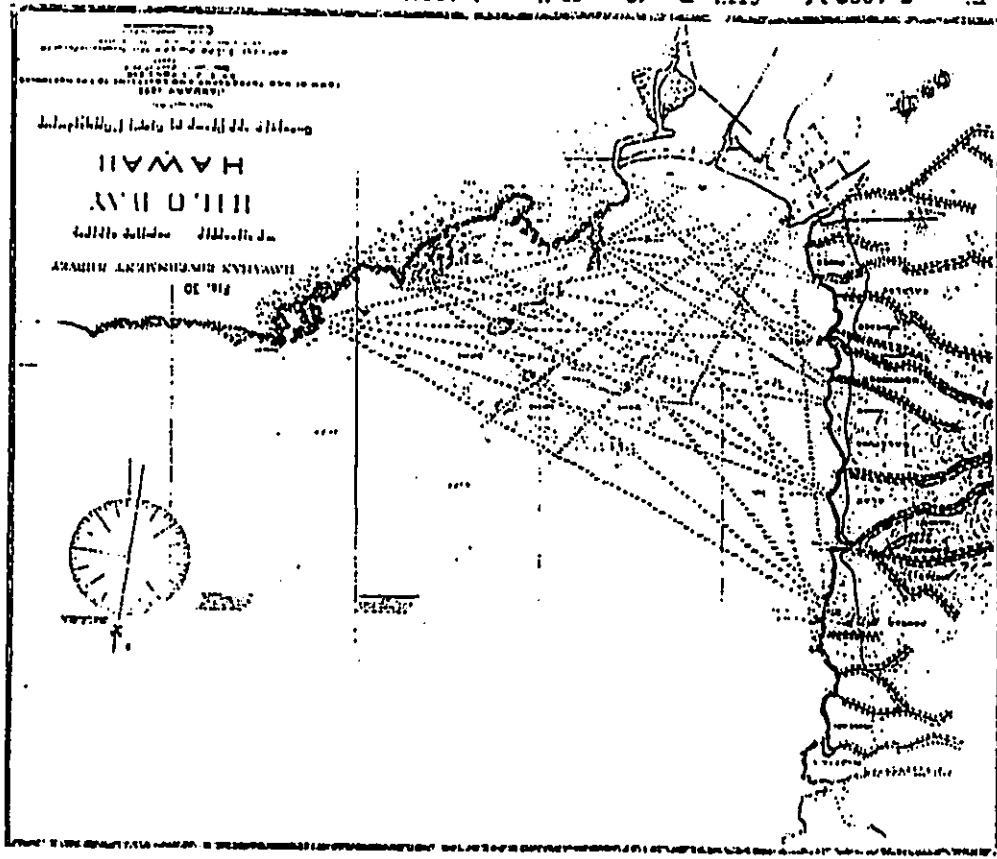


Figure 7. 1882 Map of Hilo Bay (from Kelly et al. 1981)

Land use described in the LCA claim testimony included agriculture, pasture, burial, and residence. Thirty-four houses are mentioned and LCA 2274 also describes the presence of a grave. Most of the claim testimony mentions cultivated fields. Crops include wet taro, sweet potatoes, breadfruit, coffee, and *Aulai*. A *hala* (*Pandanus* spp.) grove and fishponds are also mentioned.

By 1857, there were three sugar cane mills in the Hilo area. Large tracts of land were put in the cane cultivation and cane was also grown by individuals around their houses. In 1861, a stone wharf was constructed at Waiakea landing on the west side of Waiakea Point. A sugar mill was established in Waiakea at the inland end of Waiakea Fishpond in the late 1870s. A railroad transport system was constructed for the Waiakea Mill between 1879 and 1880. By 1880, 1,400 acres of sugar cane were in cultivation and by the end of the decade over 5,600 acres were cultivated. In 1877, a 16 ft high tsunami struck the coast of Waiakea destroying all houses within 100 yards of the shore along with a wharf, storeroom, a quarantine hospital on Coconut Island, and a bridge. An 1882 map of Hilo Bay (Figure 7) shows a network of roads in Hilo Town situated on the west side of the lowlands adjacent to the Waialuku River.

Between the 1860s and 1880s there were two wharf facilities on the west side of Waiakea Point, one on the Waialoa River, and on the west side of the bay at the foot of Waiamene Street. By the 1890s, the need for improved wharf facilities was recognized and the development of government harbor facilities began on the west side of Waiakea Point. A ship wharf was completed in 1899.

Between 1900 and the 1930s, the population of Hilo grew dramatically with the expansion of sugar cane cultivation, pineapple production, the timber industry, and other commercial developments. In the 1910s, the Hilo Railroad Company expanded the rail system to Puna and Hilo Town. A railroad wharf was built north of the mouth of the Waialoa River. Between 1909 and 1913, the railroad was extended to North Hilo and Hamakua Districts.

The pending opening of the Panama Canal and anticipated increase in trans-Pacific shipping led in serious efforts to build a breakwater to protect shipping in Hilo Bay. Construction of the breakwater began in 1908. The breakwater was initially planned for a location just east of Coconut Island, but the plan was modified and the selected site was approximately 6,000 ft east of the island. The initial plans called for a 10,000 ft long breakwater along Blonde Reef. Stone for the structure was brought by railroad from quarries in Puna and Waiakea. The breakwater was completed in 1929. A 1912 map of Hilo Bay (Figure 8) shows a large area of rock fill next to the breakwater. Railroad tracks extend on to the breakwater and rock fill. A U.S. Engineers Office quarters compound is present on shore to the west of the rock fill.

By the 1910s, the existing railroad and government wharf facilities were inadequate to support shipping. In 1912, the Territorial Government contracted the construction of a new wharf approximately one mile east of Coconut Island and the dredging of the adjacent portion of the bay. The new wharf, designated Kuhio Wharf, was completed in 1916. From the beginning, the wharf was congested and plans for a second wharf were made. Construction of the wharf began in 1921 and it was completed in 1923. A third wharf was completed in 1927. Figure 9 is a 1921 map of the harbor that depicts Kuhio Pier and the smaller Pier 2. Tracks of the Hawaii Consolidated Railroad extend from the piers along the coast to the west toward Hilo Town. A U.S. Naval Reservation and a U.S. Engineer Reservation occupy the shoreline next to the breakwater. Figure 10 is a 1925 map showing the construction phases of the breakwater and Figure 11 illustrates the dredged areas of Hilo Bay.

In 1946, a tsunami struck Hilo Bay and extensively damaged the harbor facilities including the piers and breakwater. Reconstruction of the facilities was completed in 1948. Figure 12 is a 1946 map of Hilo Harbor showing damage to the breakwater. Nine areas of damage are present. The map also shows a series of three circular structures, probably storage tanks and a square compound between the shoreline and the railroad tracks on the west side of Pier 3.

The shoreline to the west of the harbor facilities is known as Baker's Beach. The beach formed as a result of (a) harbor dredging between 1925 and 1930 and (b) reduced wave energy caused by the new breakwater (Figure 13). Today, there is very little sand present. According to a resident of the area, a man

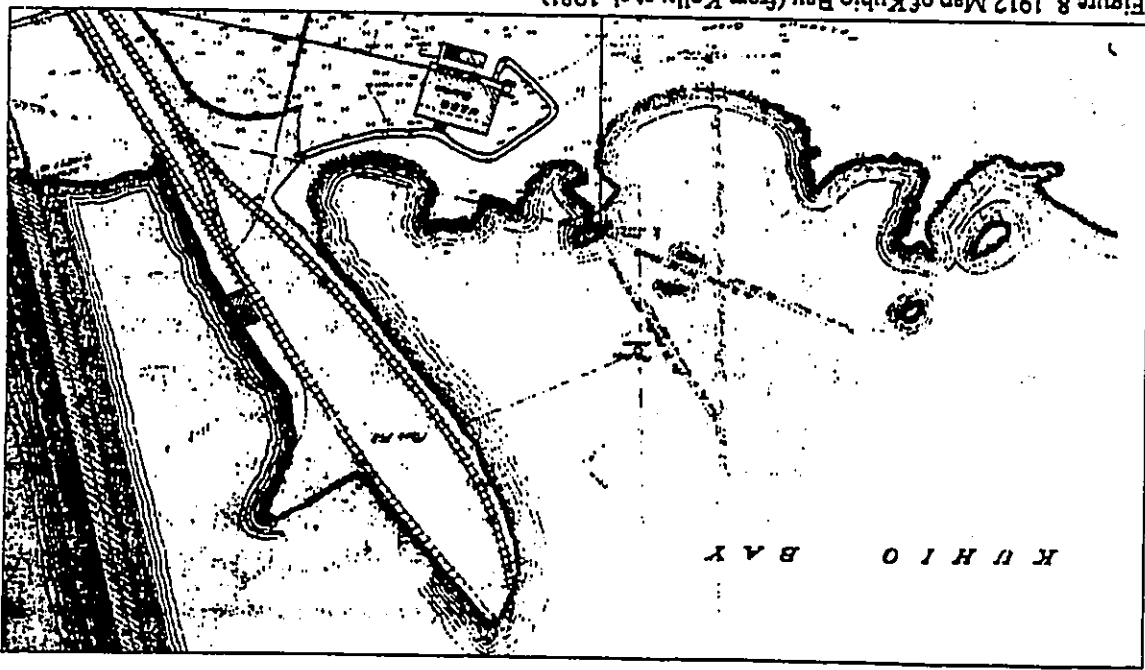


Figure 8. 1912 Map of KUHIO BAY (from Kelly et al. 1981)

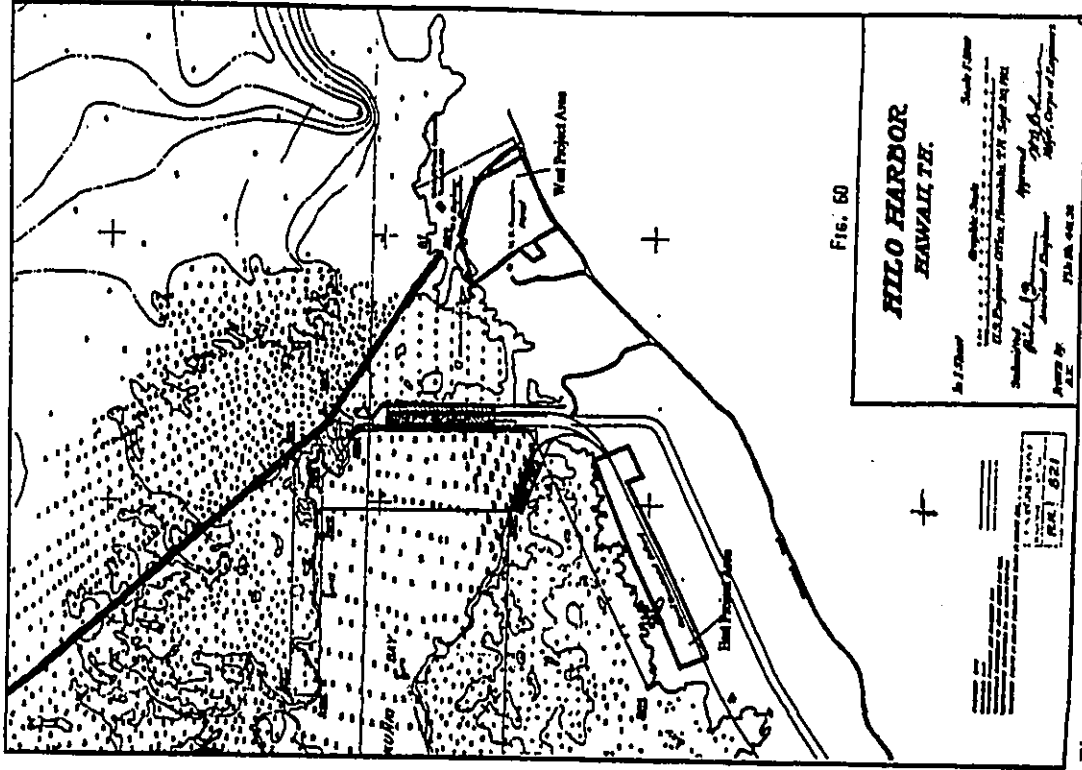
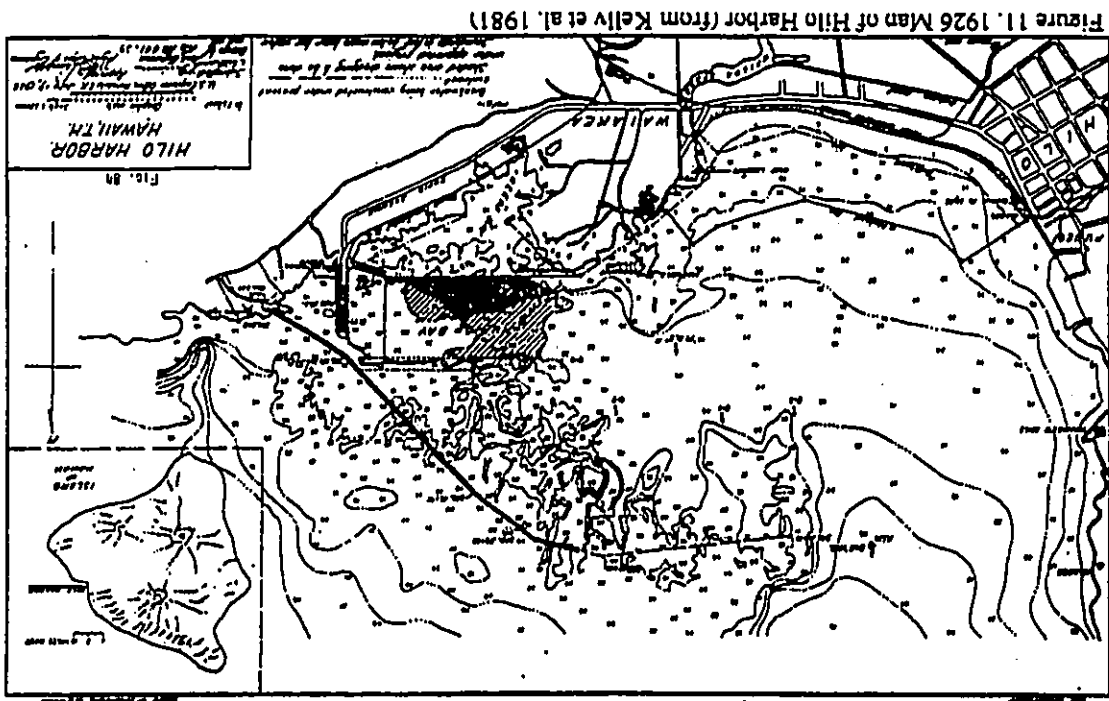
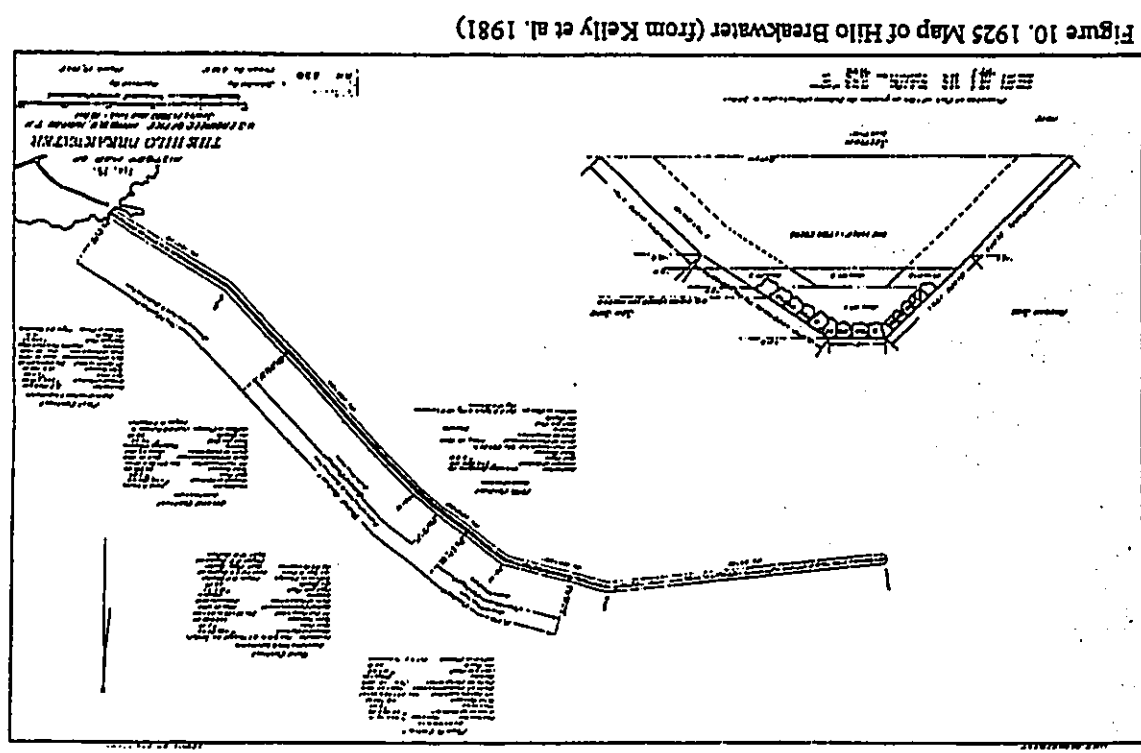


Fig. 60

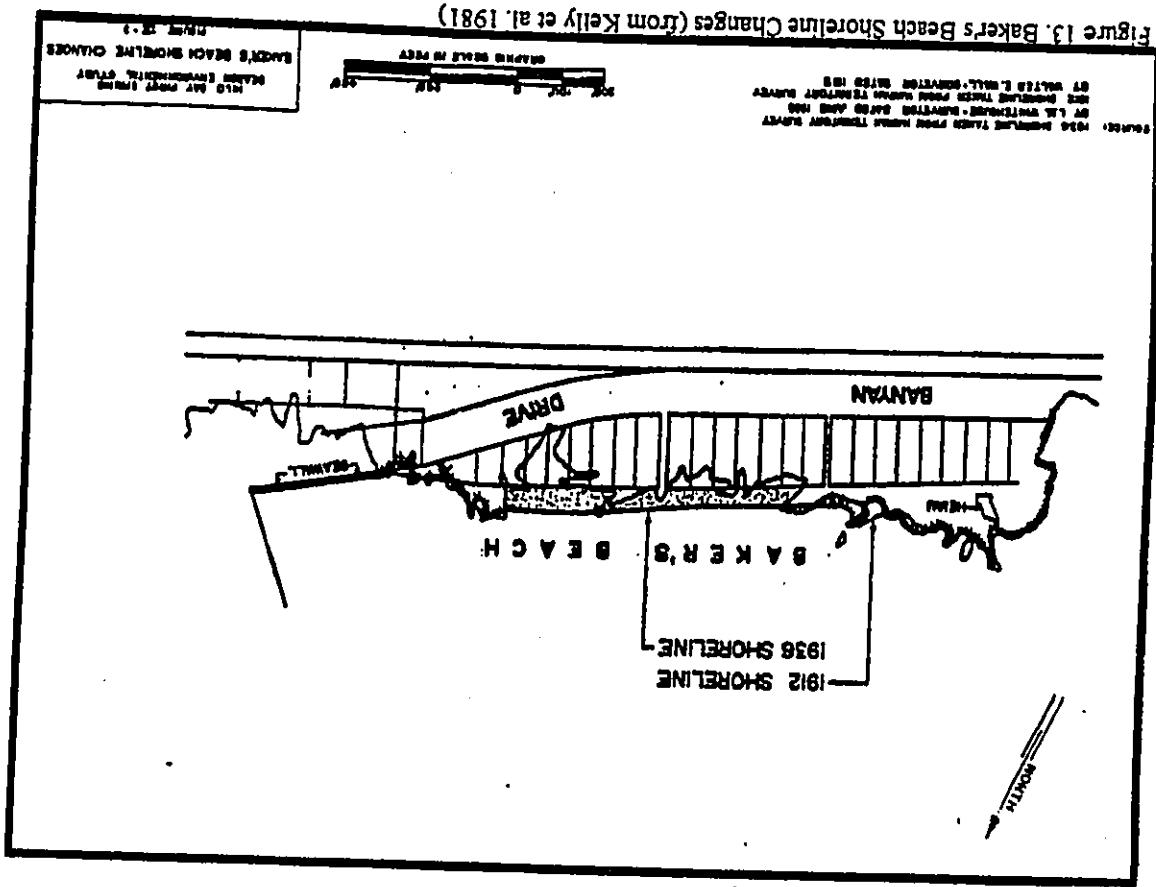
Figure 9. Portion of 1921 Map of HILO HARBOR (from Kelly et al. 1981)



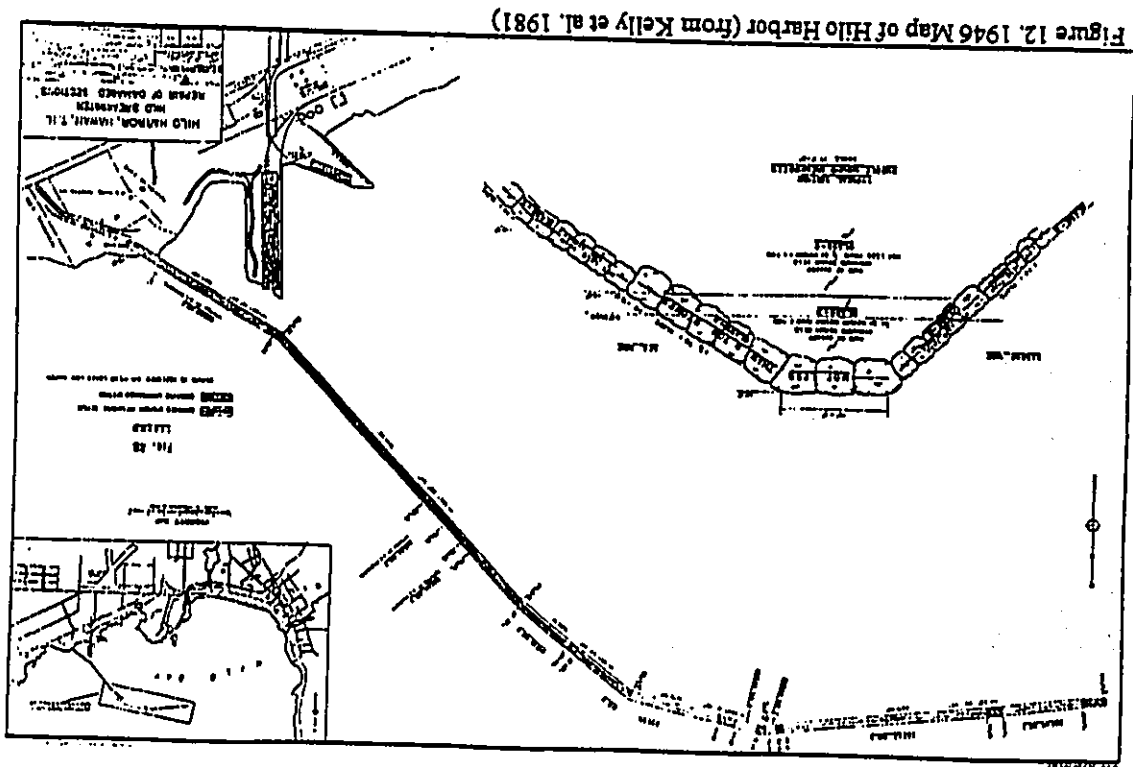
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CORRECTION

THE PRECEDING DOCUMENT(S) HAS
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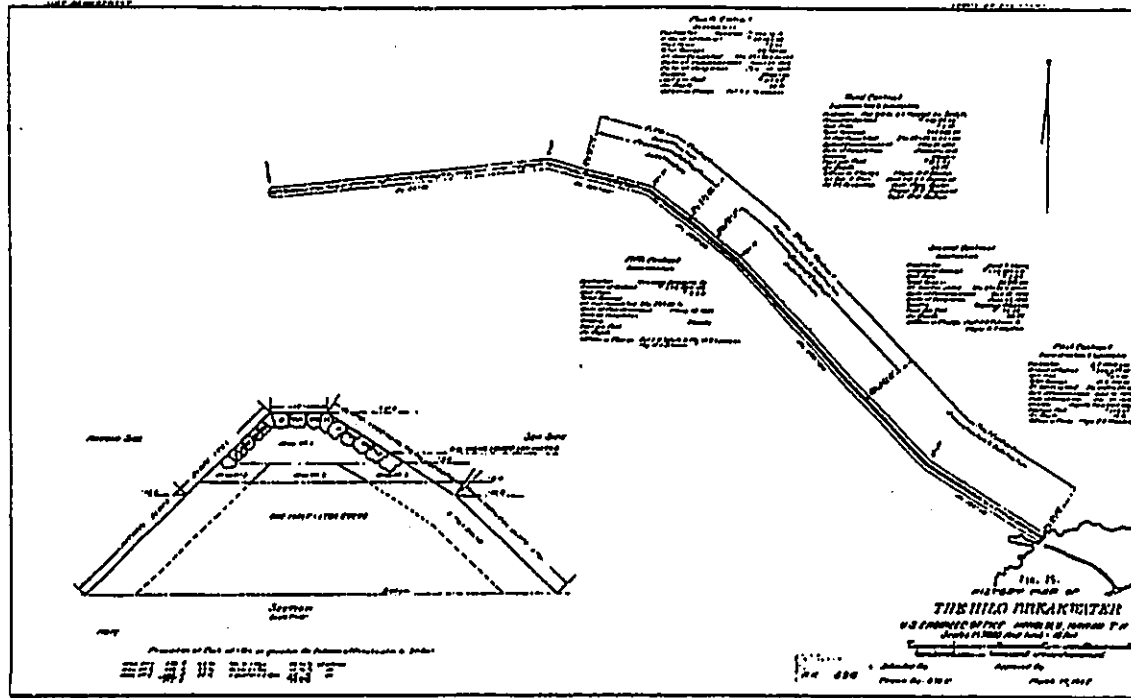


Figure 10. 1925 Map of Hilo Breakwater (from Kelly et al. 1981)

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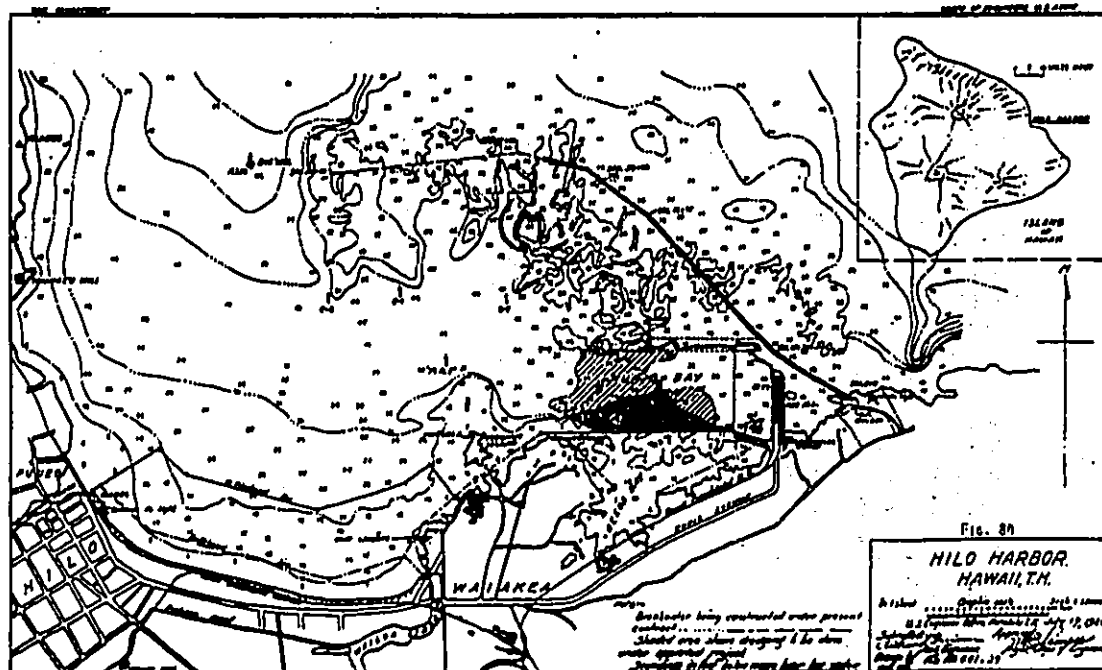


Figure 11. 1926 Map of Hilo Harbor (from Kelly et al. 1981)

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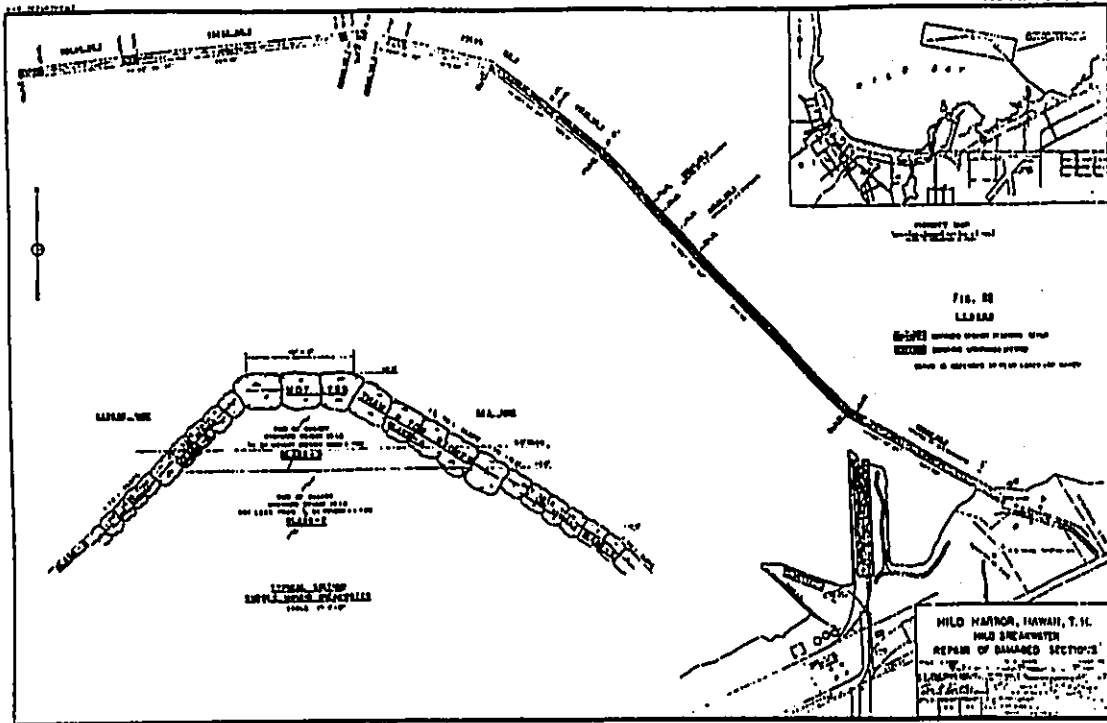


Figure 12. 1946 Map of Hilo Harbor (from Kelly et al. 1981)

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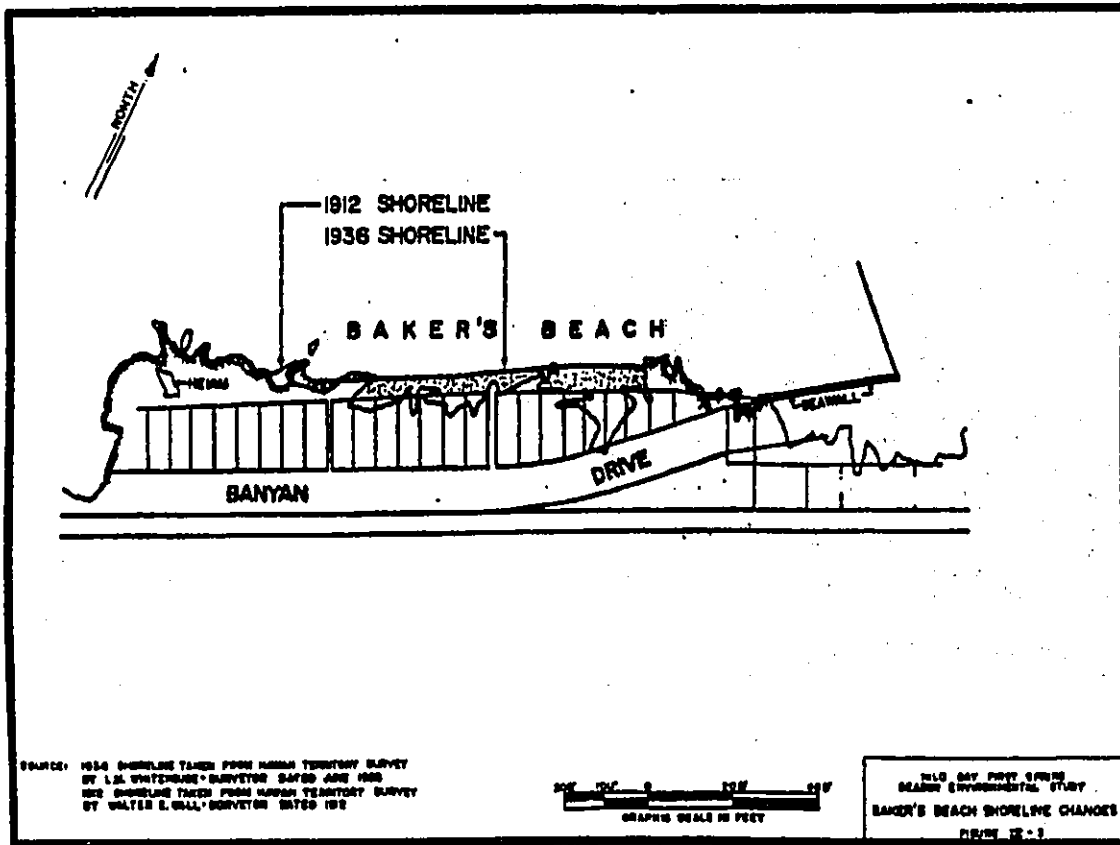


Figure 13. Baker's Beach Shoreline Changes (from Kelly et al. 1981)

McEldowney used the limited site inventory and historic documentary evidence to develop a land use and settlement pattern model for the Ilihi area. The model consists of five elevationally-defined zones: Coastal Settlement, Upland Agricultural, Lower Forest, Rainforest, and Sub-Alpine or Montane. The Coastal Settlement Zone extended approximately 0.5 miles inland from the shoreline between sea level and 50 ft elevation. The zone was the most densely populated with both permanent and temporary habitations, high status chiefly residences, and *heiau*. Settlements were concentrated at Ilihi Bay and sheltered bays and coves. Also present were fishponds and gardens where breadfruit, coconut, kauri, banana, wauke, sugar cane, sweet potato, and wet and dryland taro were cultivated. The ocean provided fish and other marine resources.

The Upland Agricultural Zone was situated between approximately 50 ft and 1,500 ft elevation. Settlement in the zone consisted of scattered residences among economically beneficial trees and agricultural plots of dryland taro and bananas. Lava tubes were utilized for shelter. A pattern of shifting cultivation is believed to have converted the original forest cover to parkland of grass and scattered groves of hick. Wetland cultivation of taro occurred along streams.

The Lower Forest Zone ranged from 1,500 ft to 2,500 ft elevation. Timber and other forest resources such as medicinal plants, *olona*, and birds were gathered from the zone. Site types consisted of temporary habitations, trails, shrines, and minor agricultural features in forest clearings and along streams. Sites in the Rainforest Zone (2,500-5,000 ft elevation) and Subalpine or Montane Zone (5,000-9,000 ft) were limited to trails and associated temporary habitations. These zones were used for intra-island travel and gathering of valued resources including hardwoods, birds, and stone for tool making.

PROJECT EXPECTATIONS

Prehistoric use of the project area likely included habitation, fishing and collecting of marine resources, burial and ritual; however, the construction activity associated with the breakwater and harbor facilities probably destroyed most sites in the project areas. Historic sites dating to the 1900s would consist of harbor-related infrastructure including roads and railroad track and potentially foundations for buildings and other structures.

* AR=Archival Research, RN=Reconnaissance Survey, IN=Inventory Survey, DR=Data Recovery

Author	Date	Study Type*	Elevation	Acreage	Historic Use	No of sites	No of Traditional Features
Kam	1983	AR	0-5	<1	None	1	1
Borthwick, Collins, Folk and Hammar	1983	IN	140-330	163	Sugar cane	4	47
Borthwick and Hammar	1983	IN	120-140	11	Sugar cane	4	4
Maly, Walker and Rosendahl	1984	IN	70-80	4.5	Sugar cane	4	51
Spear	1995	DR					
Walker and Rosendahl	1996	FI	0-480	129.8	sugar canal developed	5	7
Rosendahl	1994	FI	250-280	11	?	1	1
Kennedy and Ireland	1994	RN	70-80	8	?	0	0
Hunt and McDermott	1993	IN	200-1500	108	Sugar cane	11	88
Robins and Spear	1996	IN	200-1500	264	Sugar cane	3	18
Hammar							
Wineski, Borthwick and Hammar	1996	IN	450-500	5.23	?	0	
Devereux, Borthwick, Hammar and Orr	1997	RN	40-80	503.8	?		
Devereux, Borthwick, Hammar and Orr	1997	RN	40-80	503.8			
Devereux, Borthwick, Hammar and Orr, and Hammar and Bush	1997/2000	RN/IN	40-80	503.8	Military	4	8
							5 <i>hehu</i> and Puna Trail
Rechtman and Henry	1998	IN	120-205	40	Sugar cane	1	117
Carson	1998	IN		178	?	0	
McGerty and Spear	1998	IN	70	2.5	Sugar cane	1	13

Table 2. Summary of Previous Archaeological Research

FINDINGS

No prehistoric archaeological sites or features were present within the boundaries of the project area. The survey identified a modern asphalt pavement in the Eastern Project Area and a complex of concrete structural remains in the West Project Area. Figure 15 depicts the location of these features. The features are described below.

Previously identified sites present adjacent to the project areas consist of the Hilo Harbor Breakwater (SHIP Site 7441) and a platform on State land near the northwest corner of the Western Project Area. The platform probably corresponds with the *Aeiau* reported by Kern (1983). The feature, which was viewed from a distance of approximately 10 m, is situated in a grove of ironwood trees in the backyard of a house on Parcel 20 of TMK: 3-2-1-07. The feature is roughly 3.4 m square at the top and tapers to approximately 5.6 m at the base. It is approximately 1.5 m high with sloping sides. There is a c. 0.5 m deep depression in the center of the paved upper surface.

East Project Area

An asphalt pavement was identified during the survey of East Project Area. The pavement is rectangular in shape and measures 60.2 m long (north-northwest by south-southeast), 13.0 m wide, and 0.1 to 0.14 m in height above the surrounding ground surface. The remains of vinyl floor tiles are present on the surface of the pavement. No other cultural remains were noted. An asphalt driveway extends to the southeast from the pavement towards Kalaniana'ole Avenue. It is 43.5 m long by 4.2 m wide. The pavement and the floor tiles are depicted in Figures 16 and 17.

West Project Area

A complex of four concrete features, Site 22486, was identified in the West Project (Figure 18). The features consist of two concrete slabs (Features A and B), a set of parallel concrete curbs (Feature C), and two displaced sections of concrete slab located at the water's edge (Feature D). These features are in fair condition and are altered. Piles of bulldozed materials bound the structural remains to the west, south, and east.

Feature A

Feature A is a rectangular concrete slab located c. 15 m east of western edge of the developed portion of the West Project Area. The seaward portion of the slab is buried beneath a large pile of soil, which may have been deposited by storm or tidal wave action. The exposed portion of the slab measures 23.5 m long (east-northeast by west-southwest) and from 6.3 to 6.6 m wide. The surface of the slab is 0.09 to 0.11 m in height above the surrounding ground surface. A concrete road extends to the south-southeast from the southwest corner of the slab. The surface of the road is level with the ground surface. It is 12.5 m long (north-northwest by south-southeast) and 2.75 m wide (Figure 19).

Feature B

Feature B is a concrete slab situated to the southeast of Feature A. The main portion of the slab is rectangular in shape and is 9.6 m long (northwest by southeast) by 6.7 m wide. The slab ranges in height from 0.10 to 0.12 m. There is a concrete block at the southeastern corner of the slab. It is 2.3 m long (northwest by southeast) by 1.5 m wide and 0.08 m in height.

There is a raised concrete curb that forms an enclosure at the eastern end of the slab. This enclosure is 5.4 m long (northwest by southeast) and 2.7 m wide. The curb is 0.1 m wide and 0.08 m tall above the surface of the slab (Figure 20). There is a 4-inch (0.1 m) diameter hole in the slab adjacent to the southwestern corner of the raised curb. This hole may have functioned as a drain. A set of two concrete strips is located along the southern wall near the southwest corner. The strips are 1.1 m long (northeast by southwest) with each strip measuring 0.21 m wide and 0.2 m tall.

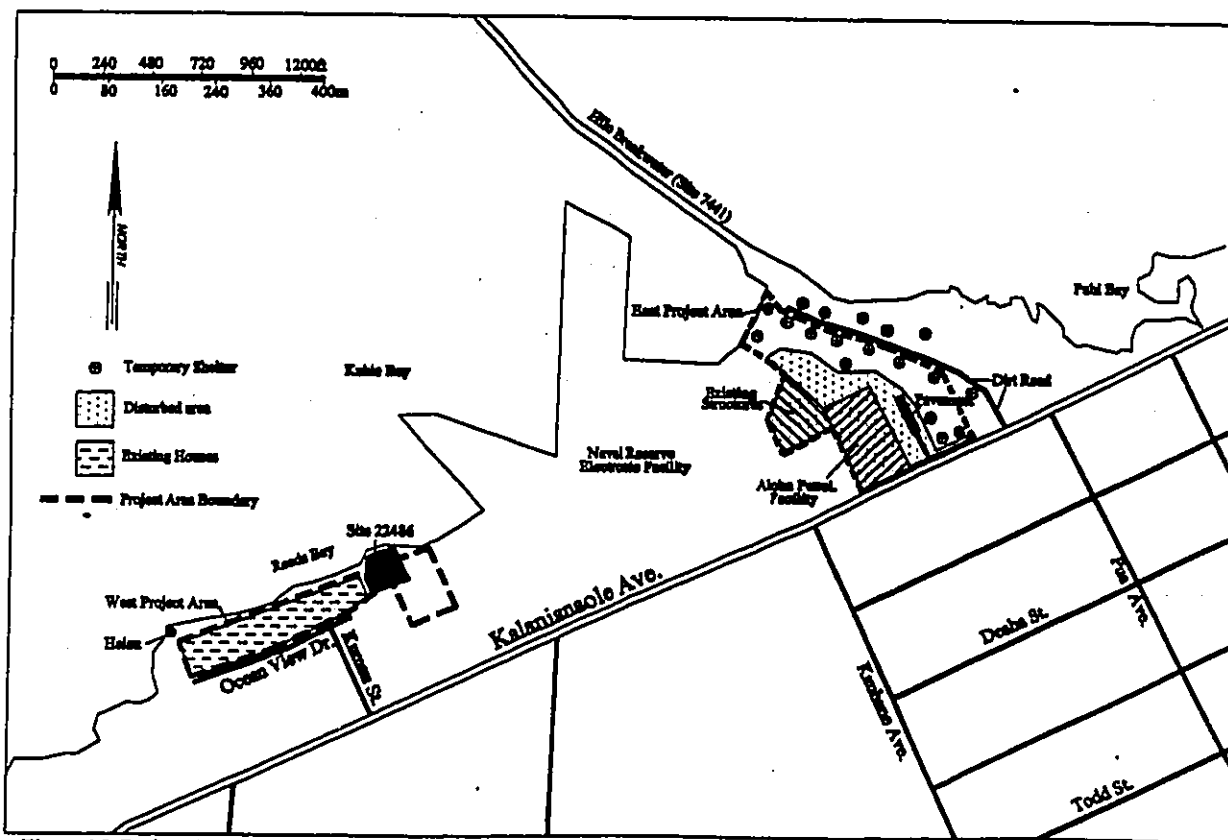


Figure 15. Project Area and Site Location Map

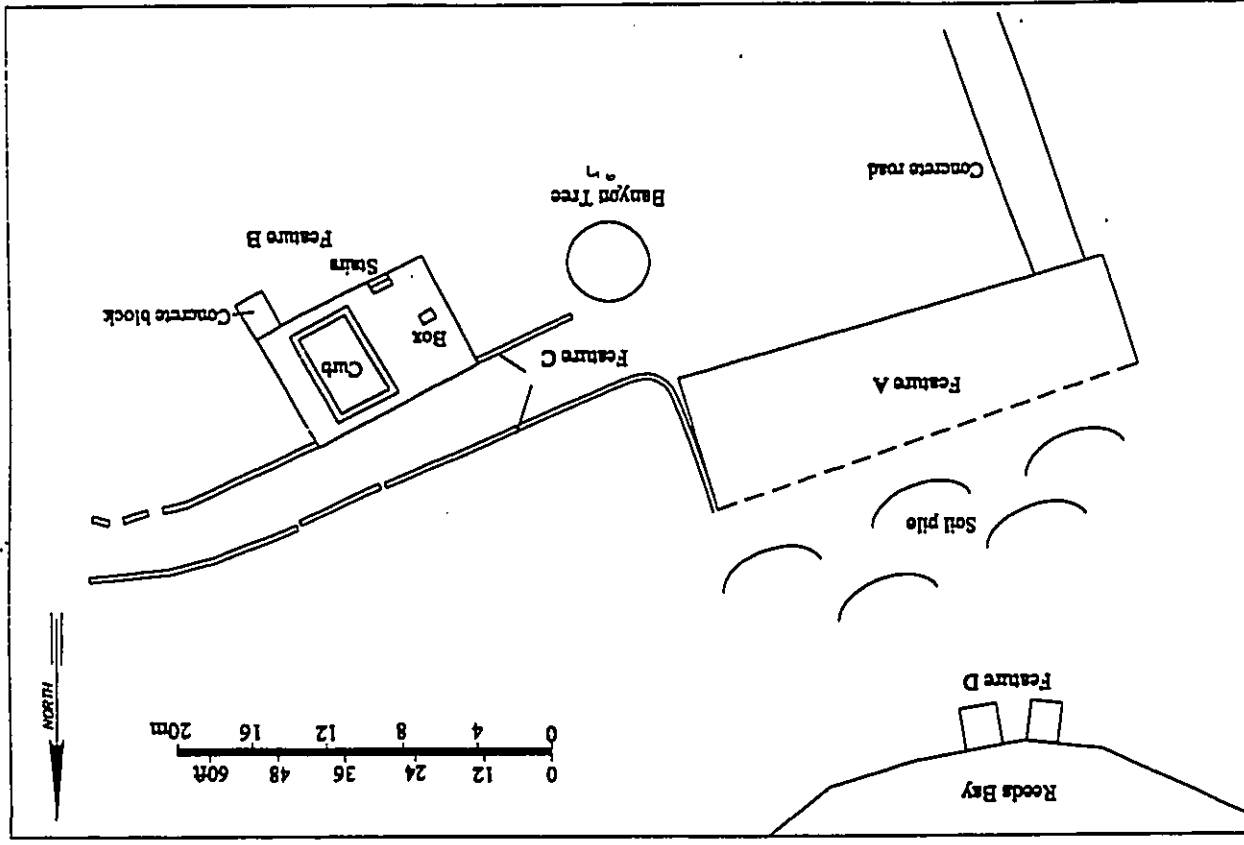


Figure 16. East Project Area - Asphalt Slab, View to North-Northwest



Figure 17. East Project Area - Floor Tiles, View to North-Northwest

A concrete box with a concrete cover is present near the center of the western wall. The box is 0.8 m long (northwest by southeast) by 0.55 m wide, and 0.05 m tall above the slab (Figure 21). There is a rusted metal handle in the center of the cover. An attempt was made to remove the cover, but the rusted handle prevented this. The nature of this portion of Feature B suggests that there is an enclosed space below the surface of the slab.

Feature C

Feature C consists of a set of parallel concrete curbs, located north of Feature B and east of Feature A. The curbs are 0.16 m in width and 0.1 m in height. The northern curb originates along the eastern side of the Feature A slab. It extends to the south-southeast for 6.5 m, then turns in an arc to the northeast for 32.9 m. The northeastern end of this section is broken and displaced from its original location (Figure 22).

The southern side of the curb is located 4.1 m southeast of the northern side. Soil is present in the space between the two curbs. This portion of the feature originates just east of a large banyan tree, extending to the east-northeast a distance of 5.75 m. At this point, the curb abuts the northwest corner of the Feature B slab. The curb continues on the northeastern side of the slab, extending to the east-northeast for 8.7 m (Figure 23). The northeastern end of this curb is also broken and displaced. It is likely that these curbs formed a narrow roadway that continued further to the east.

Feature D

Feature D consists of two displaced sections of concrete slab located at the water's edge north of the Feature A slab. The eastern slab is 2.3 m long (north-northwest by south-southeast) by 2.0 m wide. The western slab is 2.2 m long by 1.7 m wide (Figure 24). Both sections of slab are c. 0.15 m in thickness. These slab sections may have formed a pier or dock due to their location along the shoreline, or they may have simply been displaced to their current locations.



Figure 19. West Project Area - Feature A Concrete Slab, View to Northwest



Figure 20. West Project Area - Feature B, Raised Curb, View to North-Northeast



Figure 21. West Project Area - Feature B. Concrete Box with Cover, View to North



Figure 22. West Project Area - , Feature C Concrete Curb. View to North



Figure 23. West Project Area - Feature C Concrete Curb. View to South



Figure 24. West Project Area - Feature D Displaced Slab. View to Northwest

CONCLUSION

The absence of traditional sites within the project areas probably results from the extensive disturbance caused by construction activities associated with the breakwater and port facilities, and with the construction of residences along the shoreline in the West Project Area. During the 20 years of breakwater construction, the East Project Area would have been the primary staging area for construction activity. The area was later the site of U.S. Naval and U.S. Engineer Reservations. Modern port facilities and a series of temporary shelters occupy the area today. The presence of a possible *heiau* near the West Project Area conforms to expectations for traditional site types in the vicinity of the project area. No surface evidence of subsurface cultural deposits was identified and it is unlikely that such deposits would be present because there is very little soil over the lava bedrock in the area and because the area has been extensively disturbed by construction activity and periodic tsunami inundation.

The Site 22486 structural remains probably represent port-related facilities because the curb-lined road at the site extends to the east toward the developed portions of the port. The 1912 map of Kulo Bay (see Figure 8) shows a curving road and a U.S. Engineers Office quarters facility in the general vicinity of Site 22486. The curving road segment (Feature C) at the site probably corresponds to the road on the 1912 map. The facility does not appear on subsequent maps of the port dating from the 1920s and later. The 1921 map of the harbor (see Figure 9) shows a U.S. Engineer Reservation on the coast next to the breakwater. Thus, it is likely that the facility was relocated between 1912 and 1921. The displaced concrete pads at the site may have been moved during the 1946 tsunami.

Significance Assessments and Recommended Treatments

Pursuant to DLNR (1998) Chapter 275-6 (d), the initial significance assessments provided herein are not final until concurrence from the DLNR has been obtained. Sites identified and re-located during the survey are assessed for significance based on the criteria outlined in the Rules Governing Procedures for Historic Preservation Review (DLNR 1998:Chap 275). According to these rules, a site must possess integrity of location, design, setting, materials, workmanship, feeling, and association and shall meet one or more of the following criteria:

1. Criterion "a". Be associated with events that have made an important contribution to the broad patterns of our history;
2. Criterion "b". Be associated with the lives of persons important in our past;
3. Criterion "c". Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;
4. Criterion "d". Have yielded, or is likely to yield, information important for research on prehistory or history; and
5. Criterion "e". Have an important traditional cultural value to the native Hawaiian people or to another ethnic group of the state due to associations with traditional cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts--these associations being important to the group's history and cultural identity.

Based on the above criteria, Site 22486 is assessed as solely significant under Criterion "d". The site has yielded information important for understanding historic land use in project area. The mapping, written descriptions, and photography at the site adequately documents it and no further work or preservation is recommended.

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Appendix I

**ORAL HISTORY ACCOUNT, HILO HARBOR AREA
MR. JOHN MOSES**

December 2000

Oral History, John Moses

44-Year Hilo Harbor Employee; Native Hawaiian

Oral history recorded on December 13, 2000 via Telephone when Mr. Moses was at Hilo Harbor, Hilo, Hawaii.

This history was recorded through handwritten notes by Gail Atwater, AICP, Senior Planner at

R.M. Towill Corporation. Mr. Moses reviewed and edited the oral history and gave his

permission to publish it in the Draft Environmental Impact Statement for the Hawaii Commercial

Harbors 2020 Master Plan.

Mr. Moses was referred R.M. Towill Corporation by Ian Birnie, Harbormaster at Hilo Harbor because of Mr. Moses' longstanding familiarity with uses of the harbor and Hilo Bay vicinity.

Mr. Moses is a lifetime Hilo resident with 44 years of experience working at Hilo Harbor as an employee of the State of Hawaii, Department of Transportation. He has "seen lots of busses [harbormasters] come and go and lots of governors come and go." Industrial sheds at Hilo Harbor have been built and torn down over the years. Sugar used to come into the harbor for shipment. Mr. Moses remembered when the bulk sugar processing plant at the harbor closed down. There used to be a sugar warehouse at the harbor that was torn down.

In the 1960s they took down half of the Pier 1 shed, which originally was 1,000 feet long. The shed used to be full of freight - lumber, paper goods and "staples for the Hilo community." Now all the cargo comes in containers. It was all break bulk back then, with freight covering one end of the pier to the other.

A lot of fishermen have used the harbor since the 1950s. Now they need a permit to fish at night from 6 pm to 6 am. They can fish during the day without a permit, but there are restrictions "when freight is being unloaded from barges and machines are going back and forth." Besides fishing, there have traditionally been no other non-commercial uses of Hilo Harbor. School

children come for tours. The Coast Guard had a station at Radio Bay. The area behind Radio

Bay will be developed for a marine research facility by the University of Hawaii at Hilo.

Areas that are best for fishing at Hilo Harbor are the ends of Pier 1 and Pier 3. Papio and halahu are caught there. One man comes to the harbor twice a year and catches 50-70 pound ulua off the dock. Some ulua up to 80 pounds have been caught. The Casting Club has a tournament all over the island, mostly during the summer and people come to fish at the harbor. There is seldom fishing around Baker's Beach. Some fishing occurs near the hotels [along Banyan Drive]. Mullet fishing is popular in Reed's Bay and Radio Bay.

The Baker's Beach area was once the site of an Army cottage where Mr. Moses' "first boss" (the Hilo Harbormaster) lived. There were also a machine shop and equipment storage in that area and a recreation hall for the troops during World War II. The 1960 tidal wave washed most of these buildings away. Mr. Moses remembers Captain Wickland, former harbormaster, who had been an officer in the U.S. Navy and was a former ship's pilot.

Hawaiian Electric Light Company used to have a meeting hall for employees at Baker's Beach that also used to be Mr. Mosses' home. It used to be near the beach, and HELCO planned to move it to the beach. However, the tidal wave moved the structure to the beach "for them."

Appendix J

ORAL HISTORY ACCOUNT, KAWAIHAE HARBOR AREA

January 2001

Oral History, John Keola Lake
Kahuna Nui of Puukohola Heiau, Kawaihāe
Oral history recorded on January 30, 2001, Columbia Inn, Kaimuki, Oahu, Hawaii

This history was recorded through handwritten notes by Gail Atwater, AICP, Senior Planner at R.M. Towill Corporation. Mr. Lake reviewed and edited the oral history and gave his permission to publish it in the Draft Environmental Impact Statement for the Hawaii Commercial Harbors 2020 Master Plan.

Mr. Lake was referred to R.M. Towill Corporation by Daniel Kawaihāe, Superintendent of the Puukohola Heiau National Historic Site, as preeminently knowledgeable about traditional cultural practices in the Kawaihāe ahupuaa. Mr. Lake was interviewed on Oahu, where for the last 38 years he has been a chanter, teacher and lecturer in Hawaiian language and culture. Mr. Lake currently teaches Hawaiian language at Chaminade University in Honolulu and lectures on Hawaiian oral traditions at the Bernice Pauahi Bishop Museum. In the past he has lectured on oral traditions and chants at the University of Hawaii at Manoa, Department of Hawaiian Studies. Mr. Lake is 64 years old, three-fourths Hawaiian by ancestry and grew up on Maui.

Kawaihāe

There have been numerous Kahuna Nui of Puukohola Heiau over the years. A succession of members of the Lono family served as Kahuna Nui previously. Many of them were also Christian ministers. The last of these was Reverend Edward Kealanahela. Mr. Lake explained the traditional role of the Kahuna Nui as the "conscience" of the alii (ruling class) who would suggest appropriate codes of conduct, settle land issues and conduct religious rites. In 1987,

people who had been involved with the Puukohola Heiau asked Mr. Lake to assist in preparations for the re-dedication of the heiau at the bicentennial of its founding, which was to occur in 1991.

Mr. Lake worked with Mr. Kalani Meinecke, who teaches Hawaiian Studies at Windward Community College on Oahu and Mr. Sam Kaai, to help develop a mission statement and prepare for the centennial of Puukohola Heiau. They asked Mr. Lake to compile oral histories and conduct research, which took two years. Mr. Lake worked closely with Mr. Parley Kanakaole on this research effort. Mr. Lake has now been Kahuna Nui of Puukohola Heiau for 10 years. Once the descendant of a Hawaiian chief wanted to get married in a traditional ceremony at the Puukohola Heiau, Mr. Lake requested and was granted recognition by the State of Hawaii as the Kahuna Nui and as such is permitted to conduct traditional Hawaiian wedding ceremonies at Puukohola Heiau.

Mr. Lake explained an incident at the Kapuni (shark) heiau in Kawaihāe on the day he was to perform the bicentennial rededication ceremony at Puukohola Heiau in 1991. He led his group of chanters, his sons and daughter among them, down to the bay in which Kapuni Heiau is submerged to conduct the *hiinawi* or cleansing rite in preparation for the ceremony. This involved walking out into the water while chanting. Mr. Lake said that eight green sea turtles entered the bay and arranged themselves near the surface around the chanters. "None [of the turtles] moved. They just sat there, one to two feet away." When the chanters reached chest-high depth, three sharks entered the harbor, made a circular path behind the chanters and turtles, and swam away. Normally turtles would flee such a situation, but they did not move. Mr. Lake says his son often recalls this event and says, "Dad, did that really happen?"

The Pelekane lands in Kawaihae were named after the British sailors who came to Kawaihae Bay at the beginning of Contact. Pre-contact, Makalii, where the Makalii Stream met the ocean, was a fishing village. After cattle production became the dominant industry of the area, many Kawaihae residents moved up to Waimea to find jobs on the ranches. In the 1850s and beyond, the area became a center for transportation of cattle from ranches in South Kohala. Cattle were "driven down what is now Kawaihae Road" and forced to swim into the ocean. Then their horns would be tied to the side of barges for transport to Honolulu. Mr. Lake recalls in 1944-48 cattle were still being driven down Kawaihae Road destined for the port.

Pre-contact, in the area from North Kona (Honokuhau) and all along the coastline were inlets where fishing took place. These were "peaceful harbors for the ahi, Kawaihae Bay included." This also included Hapuna, where fresh water and saltwater fish ponds were located, as well as Puako. Makalii Stream provided bait which was placed in fishponds to "regenerate the cycle of fish like mullet and firmi." Following contact, the area was residential across from what is now Kawaihae Harbor. As a young boy in 1948, Mr. Lake remembers homes along this road with bananas growing in their yards. Mr. Lake shared information from anthropologist Marion Kelly, who noted a forest growing along the ridge above Kawaihae. He attributed the current dryness of the area to the "syphoning off of water" by ranching and developers. One of the streams that once emptied into the ocean no longer exists. A "river" used to run parallel to Kawaihae Road. Along the lowland river were banana and sweet potato patches. In the 1980s and 1990s, "they closed off more water" with construction of new homes.

Puukohola Heiau was dedicated in 1791. It is one of four heiau in this immediate area. The first and oldest heiau is Lono Heiau upon which Puukohola Heiau was built. This was an "agricultural" heiau where the sacrifices consisted of agricultural products such as taro, fish and "products of the field." Below on the hill is Mailekini Heiau, a structure similar in form and use to Lono Heiau. The third heiau, Puukohola, was the first luakini heiau at Kawaihae, meaning it would demand human sacrifice. Usually the sacrificed individual had broken the kapu or was "the first victim in warfare." When associated with warfare, this ritual killing was meant as a "show of bravado" to the enemy. It was such a strong signal that it "could even end the war." Mr. Lake said the Puukohola Heiau is the equivalent of the "State Temple of Hawaii."

The first sacrifice at Puukohola Heiau was in 1791 when the body of Keouakuaulu, Kamehameha I's cousin, was prepared at Mailekini Heiau and carried up to Puukohola to be "offered." Although Keouakuaulu had grown up with Kamehameha (who had carried the young boy on his shoulders), the young man was "trying to take over Kamehameha's area." The young man's upstart behavior had been observed by priests and chiefs, who killed him before Kamehameha knew what had happened.

The fourth heiau at Kawaihae is the submerged "Kapuni" heiau dedicated to sharks and eels. Hawaiians believed that each person had an "aumakua" or animal who was the reincarnation of a deceased family member who returned to "watch over" the person. It was important to know whether a certain animal was your aumakua, particularly when it was a shark. Aumakua had to be chosen carefully. The submerged Kapuni heiau consisted of stones which were dropped into

the water and then arranged. It was situated at the mouth of the Makalii Stream. It has been subject to siltation since the current Kawaihae Harbor breakwater disrupted the drainage patterns of the stream. However, "you can still dive in and see the rocks."

Mr. Lake was asked to describe the history of agricultural activity in the Kawaihae area. The "naulu rains" came from Waimea and watered the breadfruit trees which grew in a "forest" above the heiau. Kawaihae ahupuaa includes the Mauna Kea Beach Hotel to the south, to Hapuna and Puako. Waimea used to have heavy taro patches. Waimea supplied the "mountain" materials and products and Kawaihae produced the products of the sea in the traditional exchange of materials between upland and seaward areas of the ahupuaa.

Shoreline recreation at Kawaihae Bay pre-contact included swimming, deep sea diving, fishing and canoeing. Along the coast, the best diving spot was Hapuna to the south. Surfing did not occur at Kawaihae because it was "too calm." Deep sea diving gave chanters a chance to practice holding their breath for long periods of time to develop the "aho loa" or sustaining of breath that is needed in chanting. Chanters should be able to tell an entire story or deliver long phrases without stopping for breath.

Traditional gathering along the coastline was focused on limu (seaweed), especially where rivers and streams flowed into the ocean, creating brackish water. At Spencer and Hapuna beaches, there was a reef shelf. On the landside of the reef, Hawaiians would do "crabbing, squidging, and shallow water fishing." On the other side of the coral head they would do deep sea diving. They

"would use fish nets and floaters, then bring the fish in and have a hukilau." In the area where Kawaihae Harbor is now located were coconut trees. These were flat lands containing scudges growing in brackish waters that were used for mahaloa, for fine woven mats and hats.

Mookini Heiau is in the Kohala area near Hawi. This was the first great heiau in the islands. In the 4th to 6th centuries it was an agricultural heiau. In about the 12th century it became Luakini Heiau (one where humans were sacrificed) after the arrival of Paao, a great kahuna.

Mr. Lake described a traditional Hawaiian wedding ceremony, many of which he has conducted at the Puukohola Heiau. Chants are presented which are "centuries old." Wedding kapa (colored and hammered bark with designs), usually five layers thick. Once, a family brought a set of heirloom wedding kapa that were over 500 years old. Mr. Lake was overcome when he saw the old kapa and told the owners "how lucky they were" to possess such a treasure. The consistency of the kapa was similar to "felt" (fabric interfacing used in sewing). In the traditional wedding ceremony, the priests and chanters provide the prayers, but the parents of each couple actually "perform the ceremony." If there are "no signs of discomfit" voiced by the audience, the parents stand on both sides of the couple while the Kahuna "says prayers." The parents then place the kapa, which is approximately chest high in width and long enough to wrap around the couple while they stand facing each other. The parents wrap the kapa around the couple, symbolizing that they will be close together in marriage, to "demonstrate that this [sex] will take place." In ancient times, the marriage was often consummated beneath the kapa during this ceremony. If there is chanting it "gives sanction to the wedding."

Hilo

Hilo Bay was a good place for the early Hawaiians to settle because it was flat and had a large, calm bay. The earliest Hawaiians mostly settled on windward (wet) parts of the islands because fresh water was plentiful. Later on as agricultural irrigation methods became more sophisticated, the Hawaiians were able to use a system of auwai to get the water from the mountains to the lowlands. This included tunnels dug with stone implements (for example, the Menehune Ditch on Kauai), water courses made from bamboo and flumes to bring the river water to the plains. Later, plantations followed the routes set by the Hawaiians to construct their much more elaborate irrigation systems.

In Hilo, myths and legends are tied to rivers, most the Wailuku river west of Hilo Bay. What is now called Coconut Island, Mokuola, was a birthing site for the Hawaiians. Women would wade over to the island at low tide. "Ice Pond" is a marine area near the harbor that is fed by cold fresh water that "feeds all the way to Leleiwi Point." There are fresh water springs all along Keaukaha. They are all fed by artesian wells. They made possible fresh water and saltwater ponds.

The Wailoa River and Waianea Pond were the center of population and shoreline activity for the ancient Hawaiians because "you could navigate from the ocean into these waters." "Not much happened" in the area where Hilo Harbor is now located. In the Keaukaha area south of the harbor was an "orchard area" where trees such as coconuts grew because their aerial roots would permit growth in the lava-dominated surface. South of Waianea Pond were taro patches. In the

Panaewa area where Hilo International Airport is now located, another orchard area existed with coconuts and lauhala which were used for mats and tying canoes.

When asked about a supposed heiau near the Baker's Beach leased lots, Mr. Lake was not aware of a heiau with any religious significance to the Hawaiians in that location. He said the formation might be an "ahu" or boundary or dividing wall. At these ahus goods were collected and exchanged. The Kahuna Nui (high priest) and konohiki (tax collector) would go to the ahu to place the goods on the heiau.

Hanakahi was the great ahi of Hilo and the Waianea ahupuaa. There is a song, "Kaulana o Hilo Hanakahi" which is associated with Hilo and speaks of Hanakahi. Kukulu a is another "chiefly line" of Hilo.

For more information about traditional cultural practices in Hilo, Mr. Lake suggested the following sources: Faith Kanakaole Foundation (dedicated to preserving history of Hilo area), particularly the two "Kanakaole daughters" Pualani and Nalani; Larry Kimura of the University of Hawaii at Hilo; and Lokahi Belarmino, who just concluded historic research at UH Hilo.

It was very important in Hawaiian culture to develop strong individualism. However, the strong individual was always "molded by family and society."