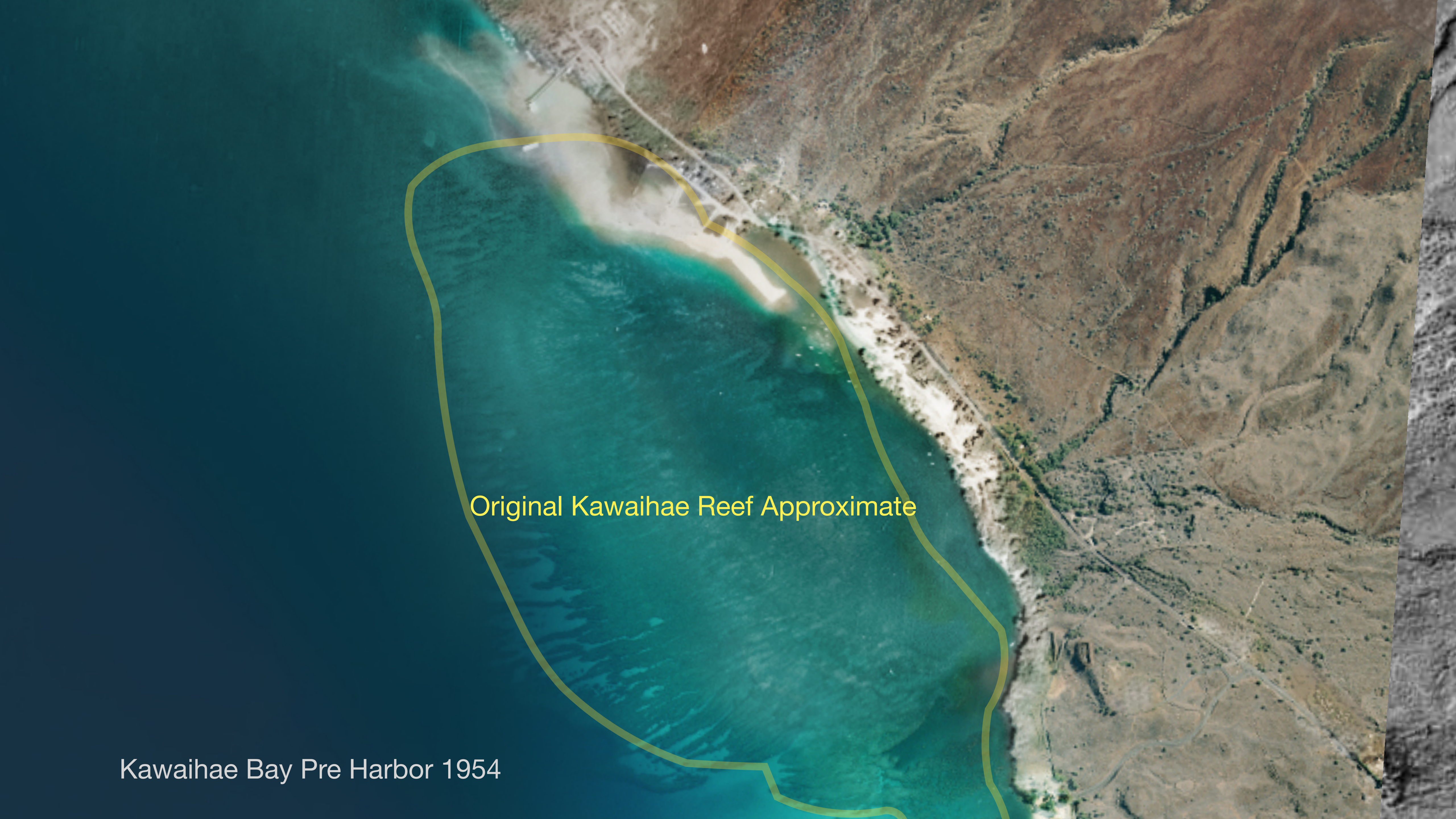


A Brief Visual History of Kawaihae Harbor
and
The Destructions of the Kawaihae Reef



Kawaihae Bay Pre Harbor 1954



Original Kawaihae Reef Approximate

Kawaihae Bay Pre Harbor 1954

United States Corps of Engineers has a plan for a harbor

KAWAIHAE HARBOR, T. H.

LETTER

FROM

THE SECRETARY OF THE ARMY

TRANSMITTING

A LETTER FROM THE CHIEF OF ENGINEERS, UNITED STATES ARMY, DATED JULY 6, 1949, SUBMITTING A REPORT, TOGETHER WITH ACCOMPANYING PAPERS AND AN ILLUSTRATION, ON A PRELIMINARY EXAMINATION AND SURVEY OF KAWAIHAE HARBOR, HAWAII, AUTHORIZED BY THE RIVER AND HARBOR ACT APPROVED ON JULY 24, 1946.

Territory of Hawaii

AUGUST 19, 1949.—Referred to the Committee on Public Works and ordered to be printed, with one illustration.

LETTER OF TRANSMITTAL

DEPARTMENT OF THE ARMY,
Washington, D. C., August 9, 1949.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEAR MR. SPEAKER: I am transmitting herewith a report dated July 6, 1949, from the Chief of Engineers, United States Army, together with accompanying papers and an illustration, on a preliminary examination and survey of Kawaihae Harbor, Hawaii, authorized by the River and Harbor Act approved on July 24, 1946.

In accordance with section 1 of Public Law 14, Seventy-ninth Congress, the views of the Governor of the Territory of Hawaii and the Department of the Interior are set forth in the enclosed communications.

The Bureau of the Budget advises that there is no objection to the submission of the report to Congress.

Sincerely yours,

GORDON GRAY,
Secretary of the Army.

USACE Letter and Preliminary Report on Kawaihae Harbor Construction 1949

32. *Views of local interests.*—Several conferences were held with local interests, including representatives of the Territorial board of harbor commissioners, shipping companies, sugar-plantation companies, port captains, and interisland and vessel pilots and captains. The development of Kawaihae Harbor proposed herein will meet the needs and views expressed by local interests.

33. *Public hearing.*—A public hearing was held on October 26, 1946, at the town of Kamuela, Hawaii, this being the largest community in the area tributary to Kawaihae Harbor. The hearing was presided over by the district engineer and was attended by 25 local, interested parties representing 2 Federal agencies, 3 sugar companies, 5 Territorial departments, 2 agricultural and cattle interests, 2 navigation companies, 1 community organization, and 10 miscellaneous local interests.

34. *Summary of improvements desired.*—The improvements desired, as indicated by the expressions of local opinion, consist of the following:

(a) A deep-water, all-weather harbor dredged to a depth of 35 feet, to consist of a channel and a harbor basin.

(b) A breakwater or revetted fill constructed on the partially exposed cora reef.

(c) A reinforced-concrete quay-type wharf.

(d) Bulk sugar-handling facilities and storage silos.

(e) A metal-storage shed.

(f) Miscellaneous freight-handling facilities.

(g) Improved connecting highways to the harbor.

35. The interested parties have advocated that, of the above-listed items, (a) and (b) be undertaken by the Federal Government and that items (c) to (f) comprise the local cooperation offered. Item (a) is

48. *Most practicable plan.*—The plan of improvement considered most practicable for Kawaihae Harbor (see accompanying drawing) is as follows:

(a) Dredge an entrance channel 400 feet wide and approximately 2,900 feet long to a depth of 40 feet below mean lower low water, with side slopes of 1 to 1.

(b) Dredge a harbor basin 1,250 feet square to a depth of 35 feet below mean lower low water.

(c) Construct a revetted fill breakwater approximately 3,200 feet long, to a maximum elevation of 13 feet above mean lower low water, with a seaward side slope of $1\frac{1}{2}$ to 1, except for the last 100 feet at each end, where the seaward side slope will be 2 to 1. (See also accompanying drawing for details and par. 2, appendix D¹.)

(d) Construct an unrevetted breakwater extension in the quieter water behind the reef approximately 1,200 feet long from the end of the revetted fill to the shore.

49. The amount of dredging required is estimated at 3,305,000 cubic yards (see appendix B¹), of which 257,000 cubic yards could be used on the shore area adjoining the harbor development. Local interests would do the grading to provide wharf and storage area. Approximately 1,100,000 cubic yards could be placed in the revetted breakwater and in and on the unrevetted fill. These three disposal areas are those of lowest cost. All dredged material in excess of these amounts would be disposed of in approved dumping areas at sea.

50. *Factors influencing the determination of the plan.*—The harbor is on the west side of the island and thus protected from the northeasterly trade winds. Protection from the west and southwest winds, waves, and storms is partially afforded by the coral reef. The reef also provides a foundation for the proposed breakwater. (See par. 1, appendix D¹.) The entrance channel would face the sea in a north-

1957 - 1959

The Kawaihae Reef was gutted to construct the Kawaihae Harbor



Kawaihae Harbor 1964

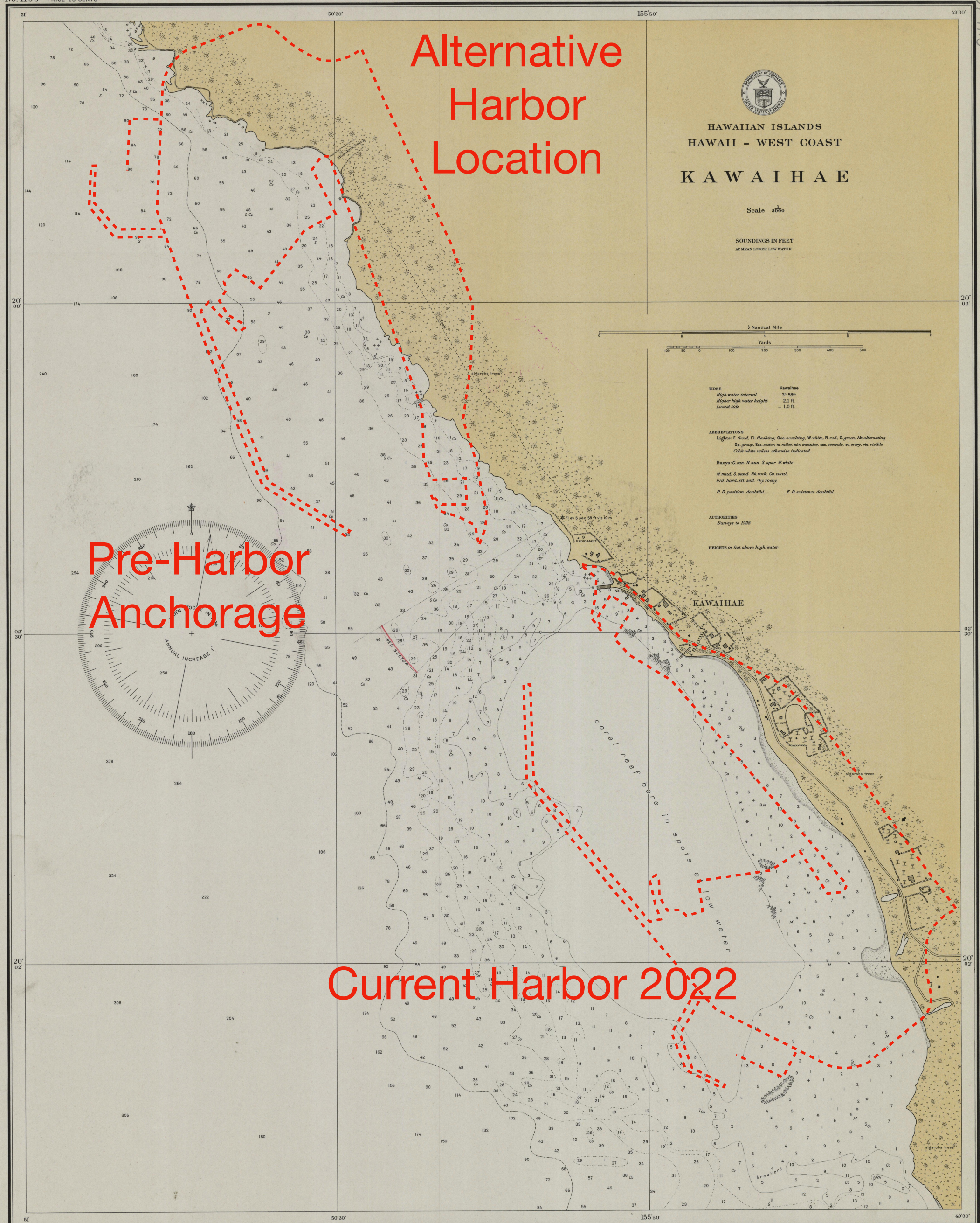
An alternate northern location for the Kawaihae Harbor could have spared the Kawaihae Reef from near-total destruction. The harbor could be located north of Reef, where the traditional anchorage was. A 1932 nautical chart showed that area with a sandy bottom at an average depth of 38 feet. Instead, the USACE made its biggest initial mistake by creating the 35-foot-deep harbor in and on the Reef. The Corps has also learned from its other mistakes. They designed the small boat harbor's opening to be south-facing instead of northwest. Heavy winter swells arrive from the northwest.

copy 1932
4166

Alternative
Harbor
Location

Pre-Harbor
Anchorage

Current Harbor 2022



1932 chart with 1928 survey

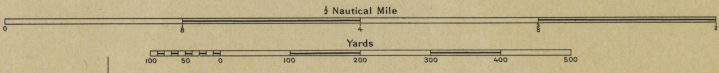
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HAWAIIAN ISLANDS
HAWAII - WEST COAST
KAWAIIHAE

Scale 1:5000

SOUNDINGS IN FEET
AT MEAN LOWER LOW WATER



TIDES	KAWAIIHAE
High water interval	37 min
Higher high water height	2.1 ft.
Lowest tide	-1.0 ft.

ABBREVIATIONS
 Light: F. fixed, Fl. flashing, Occ. occulting, W. white, R. red, G. green, Al. alternating
 Sp. group, S. center in white, and numbers, are seconds, or every, or visible
 Color when visible otherwise indicated
 Buoy: C. can, N. nun, S. spar, W. white
 Mound, S. sand, R. rock, G. coral
 Red. hard, soft, dry, rocky
 P. D. position doubtful, E. D. existence doubtful

AUTHORITY
Surveys to 1909

HEIGHTS in feet above high water

Alternative Harbor Location

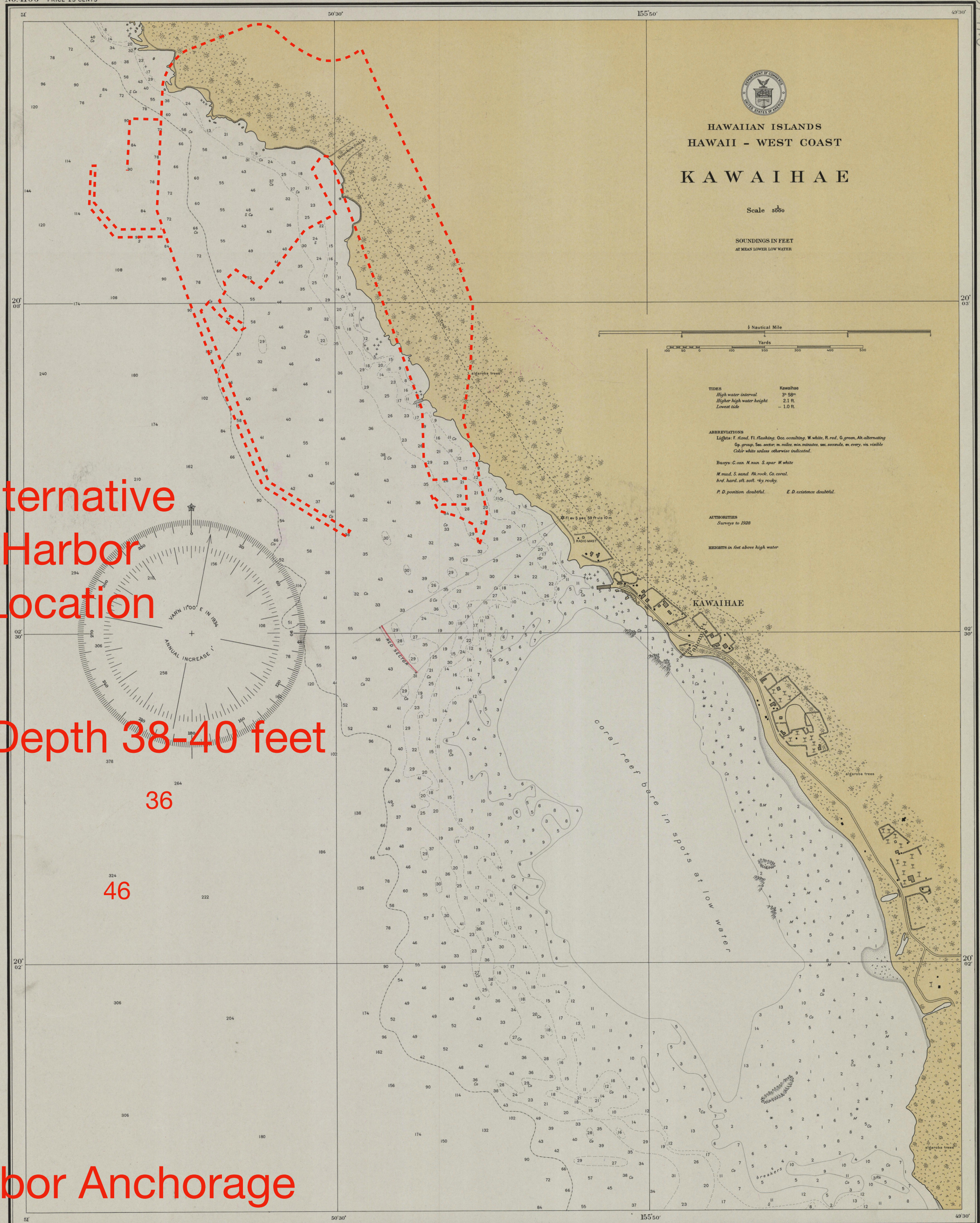
Average Depth 38-40 feet

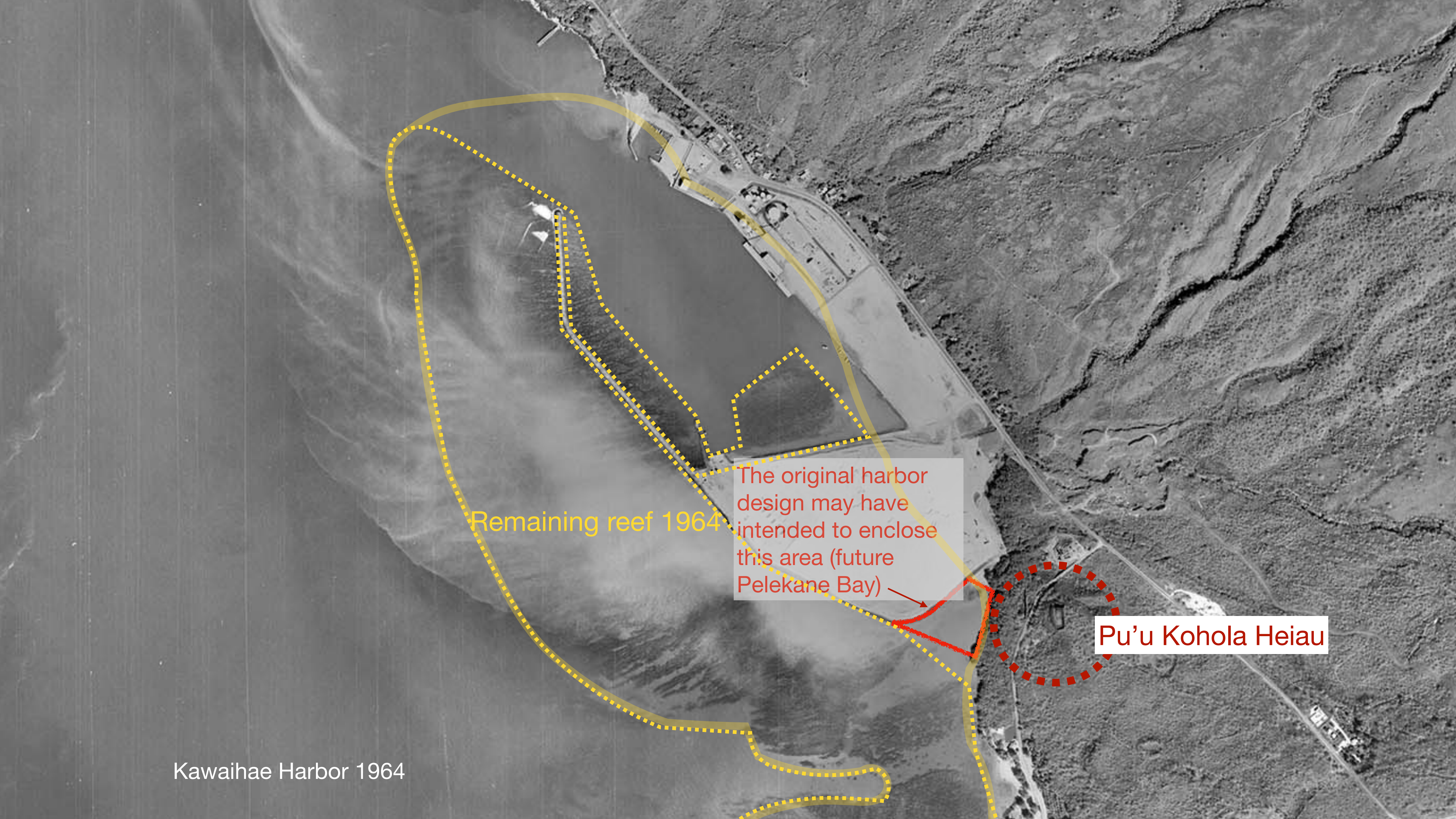
40

36

46

Pre-Harbor Anchorage



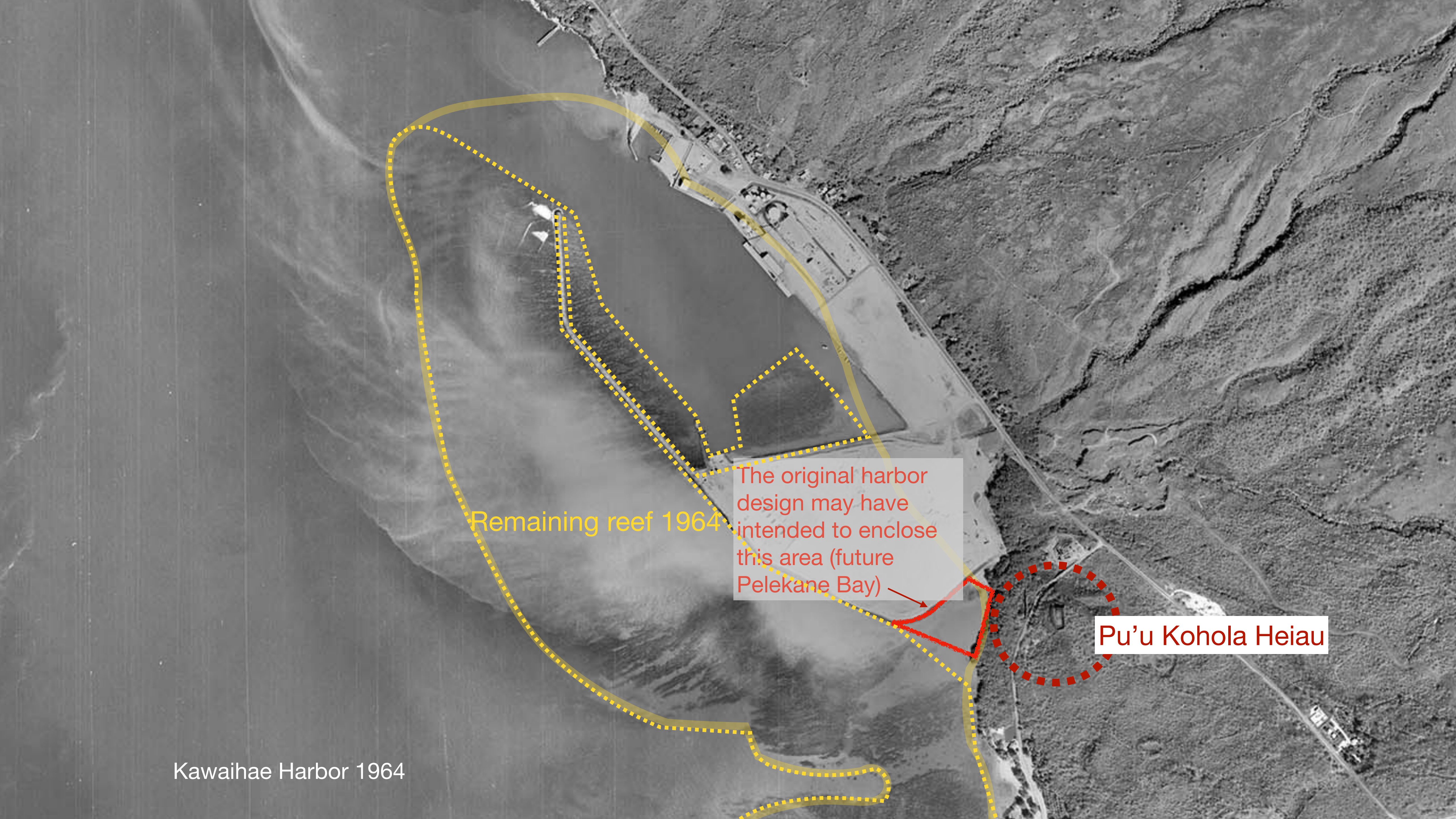


Kawaihae Harbor 1964

Remaining reef 1964

The original harbor design may have intended to enclose this area (future Pelekane Bay)

Pu'u Kohola Heiau



Remaining reef 1964

The original harbor design may have intended to enclose this area (future Pelekane Bay)

Pu'u Kohola Heiau

Kawaihae Harbor 1964

The Heiau

In 1791, King Kamehameha finished a luakini heiau, a sacrificial temple on a hill overlooking the Kawaihae Reef. He had spent some time in Kawaihae and was compelled to locate such a significant heiau there. Several geographical factors may have influenced his choice. The two fundamental ones would certainly be running water and an abundant food source. Thousands lived and worked to construct the heiau, so Kawaihae Reef would have to sustain them for at least a year.

Along came the harbor. The Kawaihae Reef, as a food source, was the first to be destroyed. Then, the harbor almost entirely severed the Heiau's connection to the Reef. What is left is a tiny patch of muddy water. The US government also claimed the shoreline as an eminent domain. That act forced local families off their homes and lands.

The three most heinous acts unleashed by colonialism against indigenous cultures worldwide are destroying the food sources, being insensitive to cultural reverence, and forcing people off their lands.

The construction of the Kawaihae Harbor achieved all three.

Kawaihae Reef Was Excavated or Dredged Minimum Three Times

The Corps' first mistake was selecting the Reef to build its harbor.
The initial mistake is then multiplied at least two more times.

Project Tugboat 1972

Addition of A Small Craft Harbor Using Extreme Explosives

US Army Corps of Engineers experimented
with extensive participatory design to create
Kaohahala Social Service Center or

Harbor Projects

Harbor Construction 1959

Project Tug Boat 1972

Harbor Widening Date Unknown

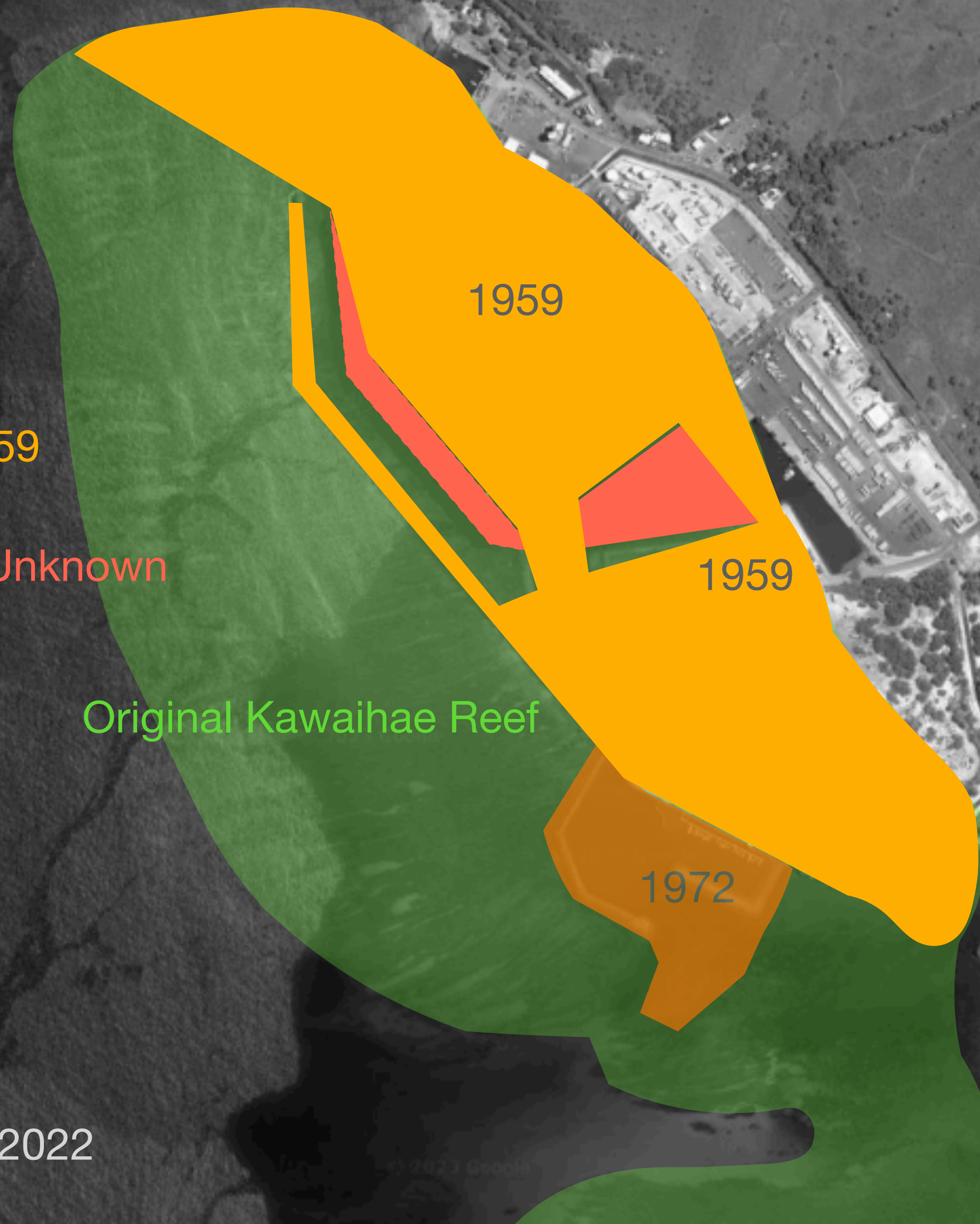
Original Kawaihae Reef

1959

1959

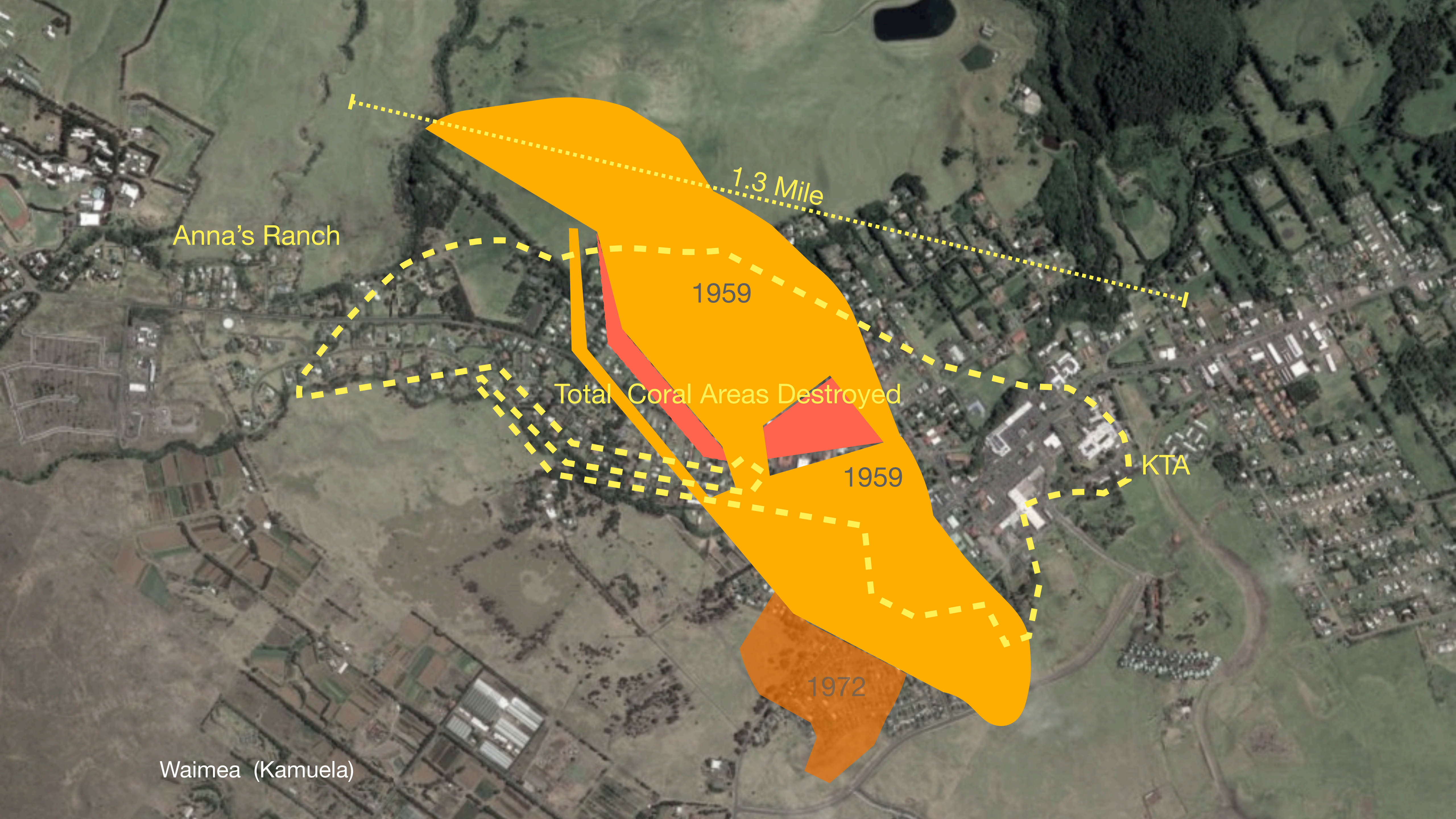
1972

Kawaihae Harbor 2022



Size Comparison

More than 200 acres of the Reef were destroyed in comparison to Waimea.



Anna's Ranch

1.3 Mile

1959

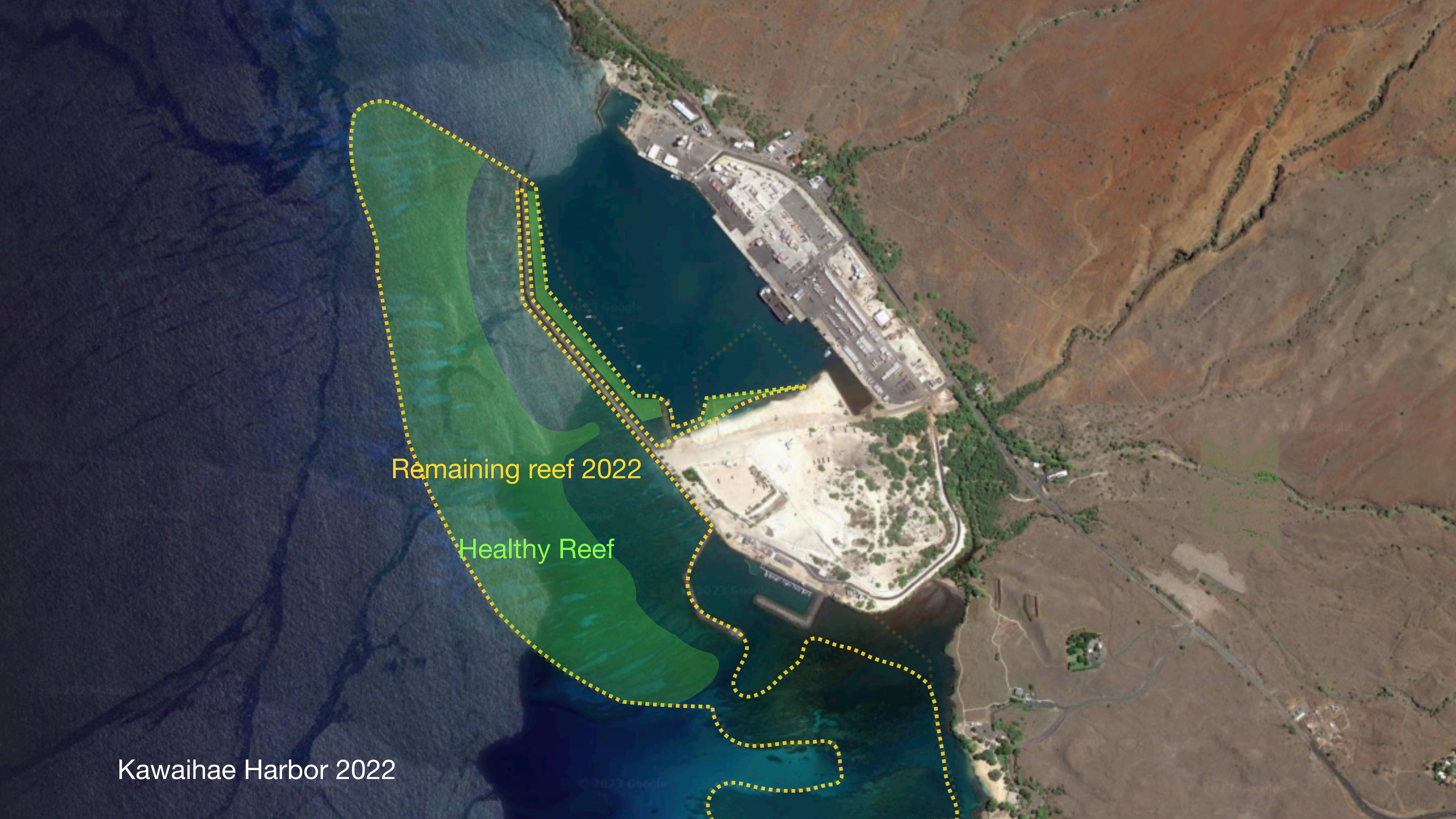
Total Coral Areas Destroyed

1959

KTA

1972

Waimea (Kamuela)



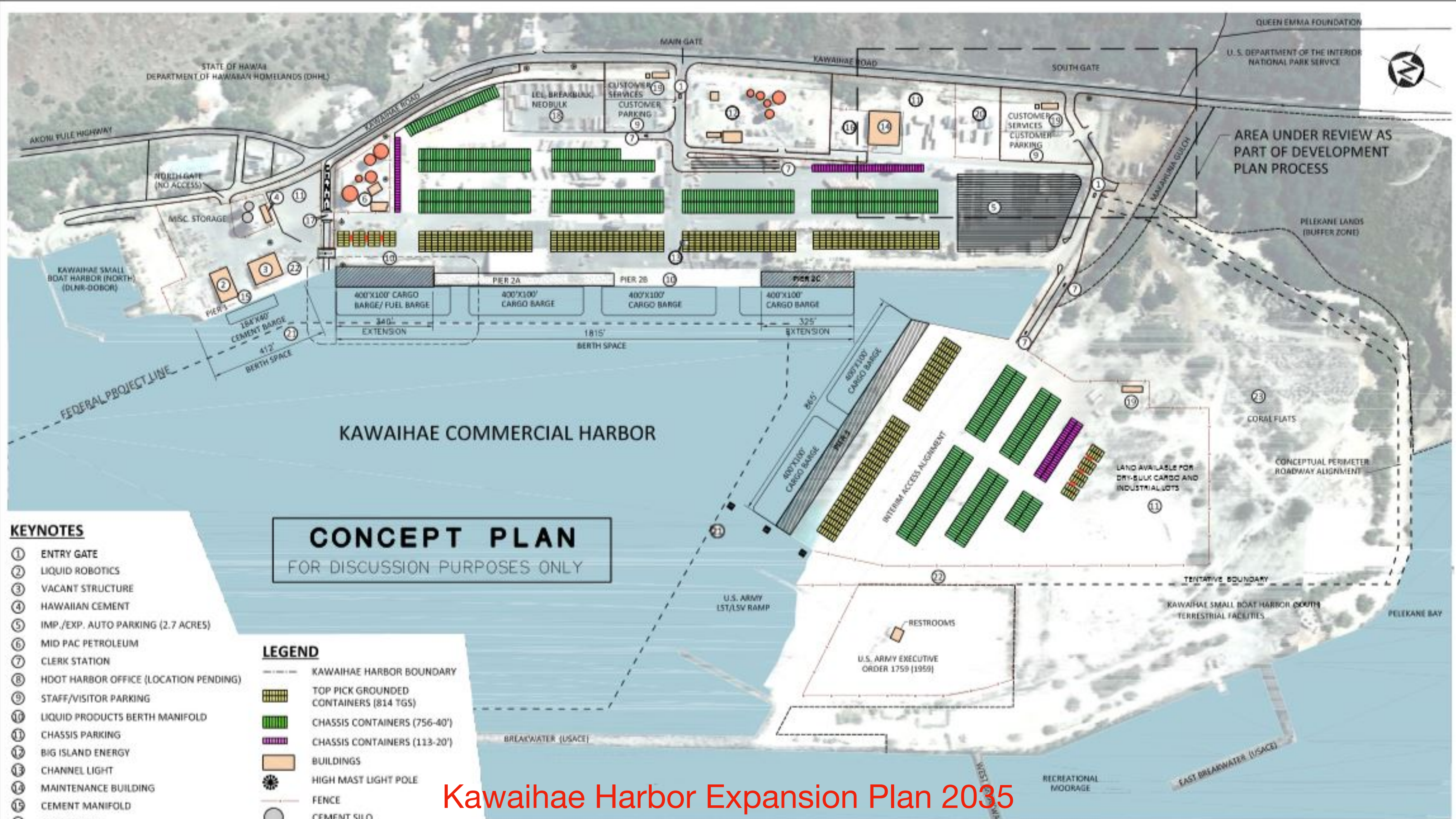
Remaining reef 2022

Healthy Reef

Kawaihae Harbor 2022

Kawaihae Reef has recovered in places and is thriving inside the Harbor, where it is undisturbed.
The reef improves 100 to 200m away from the break wall on the outside.
The effects of the Harbor's original and subsequent constructions are still being felt.

Hawaii Department of Transportation Harbors Division has a Master Plan



- KEYNOTES**
- ① ENTRY GATE
 - ② LIQUID ROBOTICS
 - ③ VACANT STRUCTURE
 - ④ HAWAIIAN CEMENT
 - ⑤ IMP./EXP. AUTO PARKING (2.7 ACRES)
 - ⑥ MID PAC PETROLEUM
 - ⑦ CLERK STATION
 - ⑧ HDOT HARBOR OFFICE (LOCATION PENDING)
 - ⑨ STAFF/VISITOR PARKING
 - ⑩ LIQUID PRODUCTS BERTH MANIFOLD
 - ⑪ CHASSIS PARKING
 - ⑫ BIG ISLAND ENERGY
 - ⑬ CHANNEL LIGHT
 - ⑭ MAINTENANCE BUILDING
 - ⑮ CEMENT MANIFOLD
 - ⑯ SUBSTATION
 - ⑰ BRIDGE - CLOSED TO TRAFFIC
 - ⑱ LCL CARGO (1.5 ACRES)
 - ⑲ OFFICE
 - ⑳ INSPECTION AND QUARANTINE AREA (1 ACRE)
 - ㉑ POTENTIAL FUTURE FERRY BERTH
 - ㉒ POTENTIAL FUTURE FERRY STAGING AREA
 - ㉓ POTENTIAL DRY-BULK CARGO / NEO-BULK CARGO / INDUSTRIAL LOTS

- LEGEND**
- KAWAIHAE HARBOR BOUNDARY
 - ▨ TOP PICK GROUNDED CONTAINERS (814 TGS)
 - ▨ CHASSIS CONTAINERS (756-40')
 - ▨ CHASSIS CONTAINERS (113-20')
 - BUILDINGS
 - ⊙ HIGH MAST LIGHT POLE
 - FENCE
 - CEMENT SILO
 - PETROCHEMICAL TANK
 - REEFER PLUGS
 - ▨ NEW PIER / PIER EXTENSION
 - ▭ RECONSTRUCTED PIER

Kawaihāe Harbor Expansion Plan 2035

KAWAIHAE HARBOR

SCALE: 1"=160'

REV.	DESCRIPTION	DATE	BY	CHK.
1	ISSUED FOR CLIENT REVIEW	08/11/20	JK	JK
2	ISSUED FOR CLIENT REVIEW	09/11/20	JK	JK
3	ISSUED FOR CLIENT REVIEW	09/11/20	JK	JK
4	ISSUED FOR CLIENT REVIEW	10/12/20	JK	JK
5	ISSUED FOR CLIENT REVIEW	10/26/20	JK	JK



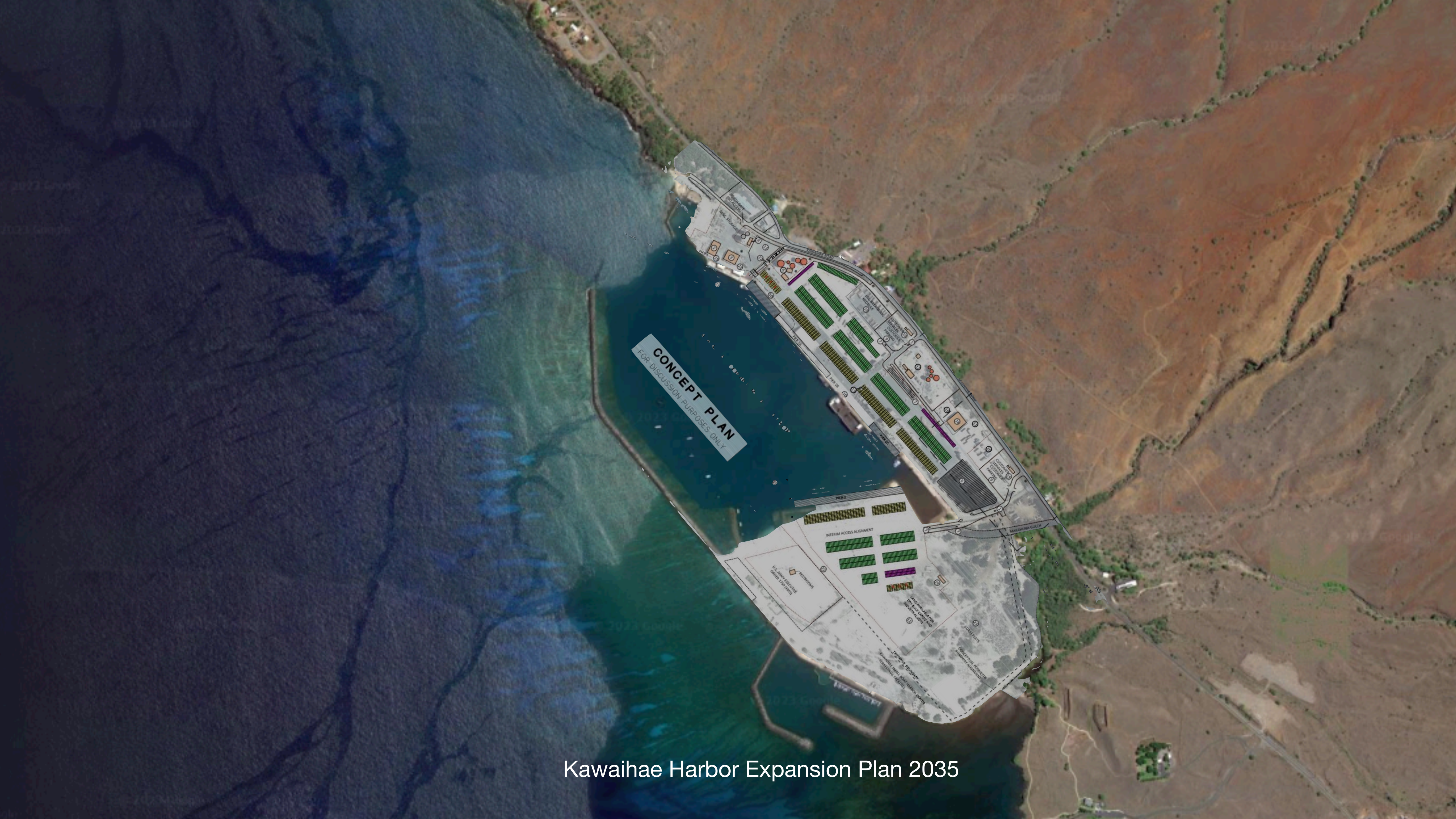
DESIGNED BY: WAB
 DATE: 08/23/2009
 DRAWING NO: 0029

DESIGNED BY: WAB
 DATE: 08/23/2009
 DRAWING NO: 0029

HAWAII COMMERCIAL HARBOR'S
 2035 MASTER PLAN UPDATE
KAWAIHAE HARBOR

FIGURE 4.2

Date: 10/11/2020 10:20:00 AM User: jk...
 File: H:\Projects\2020\Kawaihāe Harbor\2035 Master Plan\2035 Master Plan.dwg
 Plot: 10/11/2020 10:20:00 AM User: jk...
 Plot: 10/11/2020 10:20:00 AM User: jk...



CONCEPT PLAN
FOR DISCUSSION PURPOSES ONLY

Kawaihae Harbor Expansion Plan 2035



KAWAIHAE HARBOR BEACH aka CORAL FLATS or LSD BEACH

A visual survey of Kawaihae Harbor Beach aka Coral Flats/LSD Reef was done on August 15, 2023.
This reef has survived two major excavations inside the harbor.

Now it is the target of the newest plan for the harbor expansion.

KAWAIHAE HARBOR

865'

400'X100'
CARGO BARGE

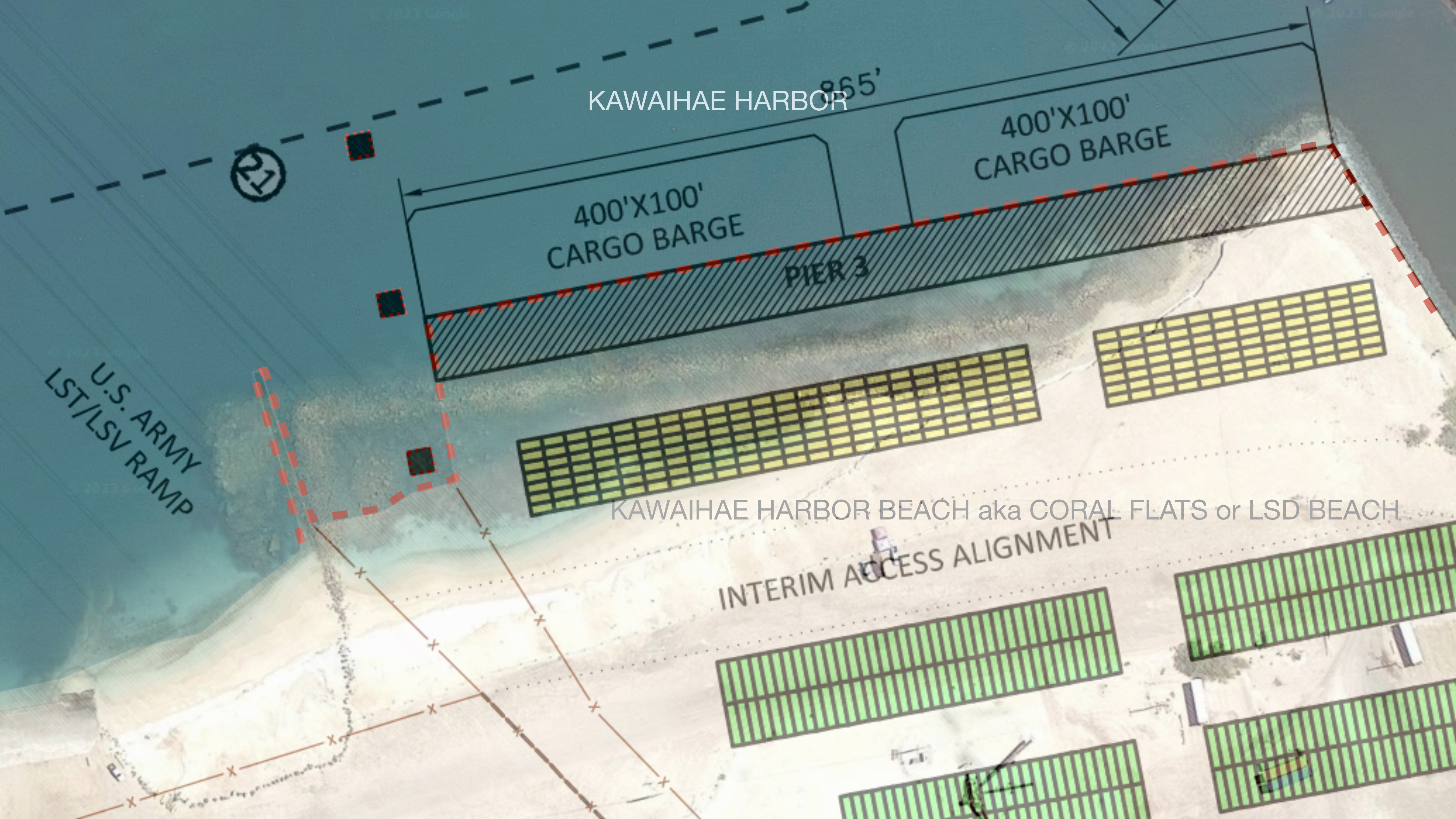
400'X100'
CARGO BARGE

PIER 3

U.S. ARMY
LST/LSV RAMP

KAWAIHAE HARBOR BEACH aka CORAL FLATS or LSD BEACH

INTERIM ACCESS ALIGNMENT



KAWAIHAE HARBOR

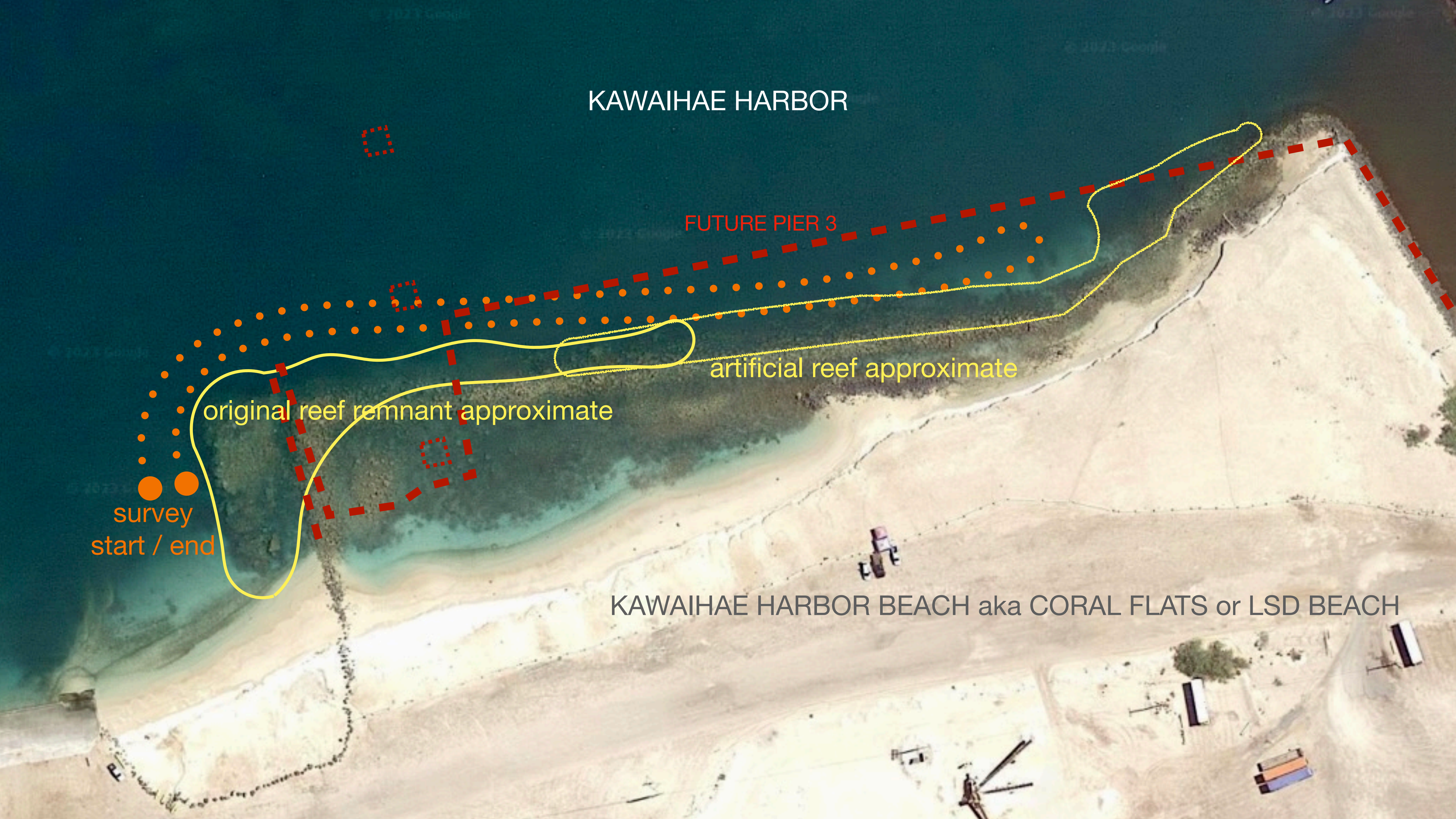
FUTURE PIER 3

artificial reef approximate

original reef remnant approximate

survey start / end

KAWAIHAE HARBOR BEACH aka CORAL FLATS or LSD BEACH



The survey yields various healthy corals, including the threatened Cauliflower corals.

The remaining original reef is dense with colonies.

Where there are boulders and rubbles, every big or small one host coral lives.

One endangered hawksbill sea turtle and a white-tip shark made their brief appearances.

Conclusion

The construction of the Kawaihae Harbor must be remembered as a terrible mistake. The decisions by USACE or whomever to destroy the most extensive reef on the island must not be repeated. After the initial blunder, the Corps repeatedly made even more terrifying experiments with extreme explosives to excavate more holes in the reef.

The tragic irony of this debacle is that the harbor can be built just north of the existing harbor, where the original anchorages occur. The area is sandy and deep, with no reef to destroy. The Corps would have to use more rocks readily available on this island made out of basalt.

Their 1949 USACE report decided that using the reef as a foundation was practical. That decision, supported by the catastrophic decision to carve out the reef for a deep draft harbor, would have been impossibly stupid if it were made today. Yet, every time the coral reef is destroyed, a mistake is made, and the Hawaii Department of Transportation and The Corps have piled on more mistakes and are willing to repeat the tragedy.

Any future decision regarding destroying the reef must have the consent of the reef.

kawaihaereef.org