30 JUL 2024

INFORMATION PAPER

SUBJECT: Kahaluʻu Bay Ecosystem Restoration, Island of Hawaiʻi, Hawaiʻi

1. Purpose: To provide information on the subject project.

2. Points of Major Interest and Facts.

a. The Kahaluʻu Bay Aquatic Ecosystem Restoration Study is being conducted under Section 206 of the Water Resources Development Act of 1996. Section 206 authorizes the U.S. Army Corps of Engineers (USACE) to initiate investigations and implement projects for aquatic ecosystem restoration with the objective of restoring degraded ecosystem structure, function and dynamic processes to a less degraded, more natural condition considering the ecosystem's natural integrity, productivity, stability, and biological diversity. The non-federal sponsor for this study is the County of Hawaiʻi.

b. Kahaluʻu Bay, managed by the County of Hawaiʻi, is an approximately one-half-mile-wide bay that includes a pocket beach and beach park located on the west coast of the island of Hawaiʻi (Figure 1), approximately five miles south of Kailua-Kona. On the shore is a parking lot, two pavilion structures, and two restrooms (Figure 2). These structures are protected by three seawalls at the shoreline (Figure 2). Between the two seawalls is a non-functional fishpond (Figure 2). Corals are interspersed throughout the bay and Kahaluʻu is partially sheltered from waves by a historic breakwater called the Menehune Wall (Figure 2).

There are four major habitat types within the bay: intertidal zone, tide pool, lagoon, and coral reef. At the shoreline are intertidal zones and tide pools. The area within the breakwater is a lagoon with the highest concentration of corals in the southern portion. The water is 2 to 4 feet deep (MLLW) on the southern half and 4 to 6 feet deep (MLLW) on the northern half. These four habitats combined with shallow waters of the bay make Kahaluʻu Bay a popular recreational destination.

c. The coral reef system provides Kahaluʻu Bay and the surrounding region with many ecosystem services. Within Kahaluʻu Bay, the coral reef provides recreational values, attracting tourists, divers, and snorkelers who wish to view the multitude of marine species that reside in and around the reef system. The reef also plays a role in sustaining subsistence fishing practices, serving as nurseries and habitats for commercially important fish species. The complex physical structure of the reef provides shelter, feeding grounds, and breeding sites for a plethora of marine organisms, the reef is a cornerstone in maintaining food web dynamics.

Kahaluʻu Bay is a historical and cultural site for the Native Hawaiian community on the Island of Hawaiʻi. The study area includes the Menehune Breakwall and traditionally constructed fish ponds. The cultural and identity values of the Bay and its shoreline features are tied to indigenous Hawaiian beliefs and practices, representing sacred spaces that foster a sense of connection between humans and the marine realm.

d. An ecosystem restoration study is needed because the Kahaluʻu coastal and marine aquatic ecosystems have been adversely impacted by runoff from the nearby parking lot and road

and sediment transport onto the reef due to inundation of the shoreline and coastal erosion. During storm events, sediment is transported onto the coral reef due to a combined erosion of the natural beach and inundation of the shore. This adversely affects marine flora and fauna by smothering corals and organisms. The suspended sediment during and after a storm reduces sunlight, thereby inhibiting the photosynthesis process which corals rely on for growth and sustainment. Runoff during rainfall events transports pollutants such as hydrocarbons, oil, heavy metals, and sediment from the nearby parking lot and road into Kahaluʻu Bay. This influx of contaminants, combined with the sedimentation resulting from inundation further impairs the overall water quality making corals more susceptible to disease and impedes growth and reproduction.

Additionally, coastal storm risk threatens safety, public and critical infrastructure, and significant historical and cultural resources. Aliʻi Drive, a critical thoroughfare that allows access to coastal communities and businesses on the central western coast of Hawaiʻi, is at risk of failure due to coastal erosion.

The Federal Interest Determination was approved in March 2024. The FCSA has been prepared and was transmitted to the County of Hawaiʻi for execution in June 2024. The County of Hawaiʻi passed a resolution authorizing partnership and cost sharing with the Army Corps and is expected to sign the FCSA in August 2024.

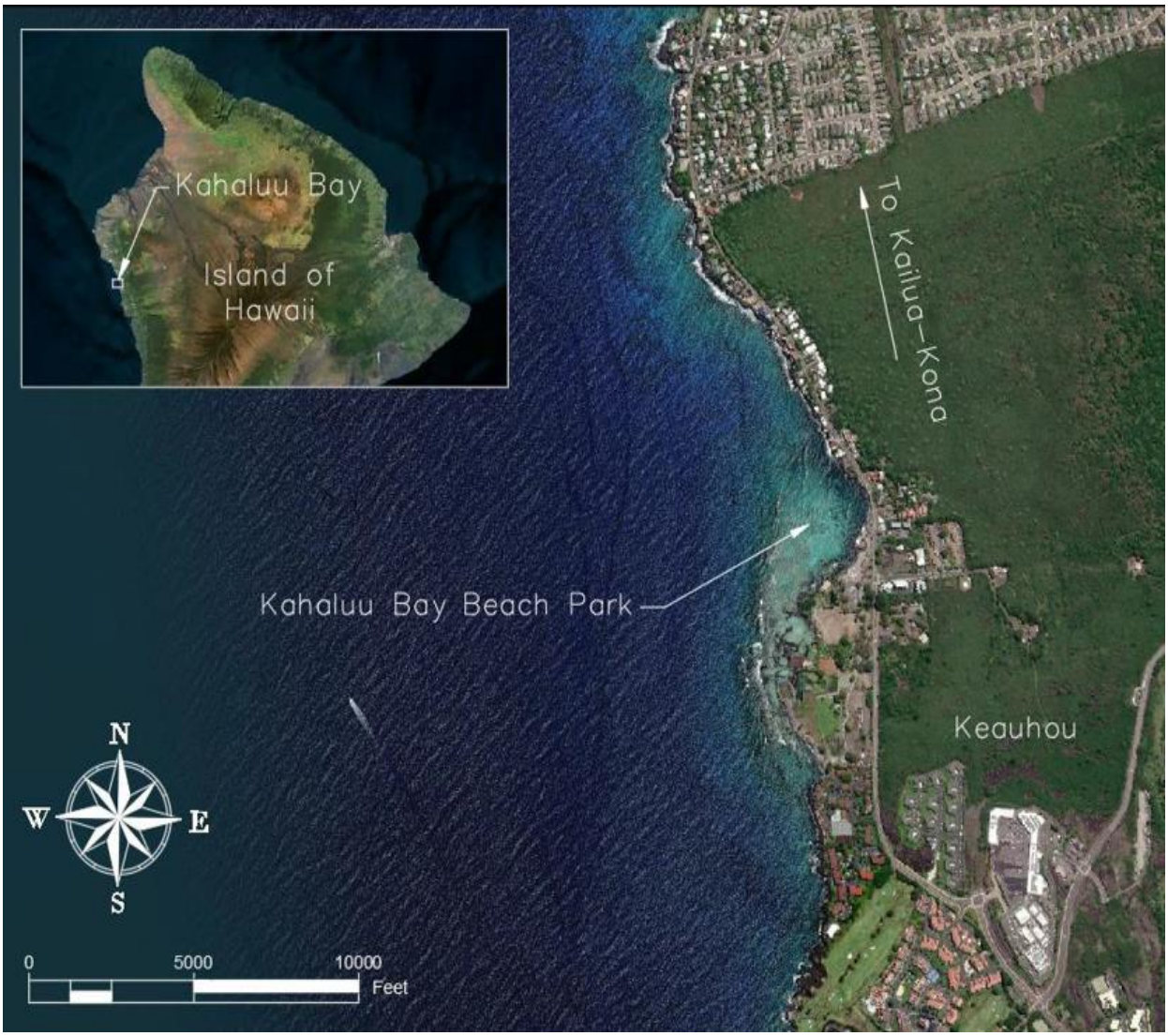

Figure 1. Location of Kahaluʻu Bay, Hawaiʻi (Source: Sea Engineering Coastal Assessment for Kahaluʻu Beach Park Planning, 2021)

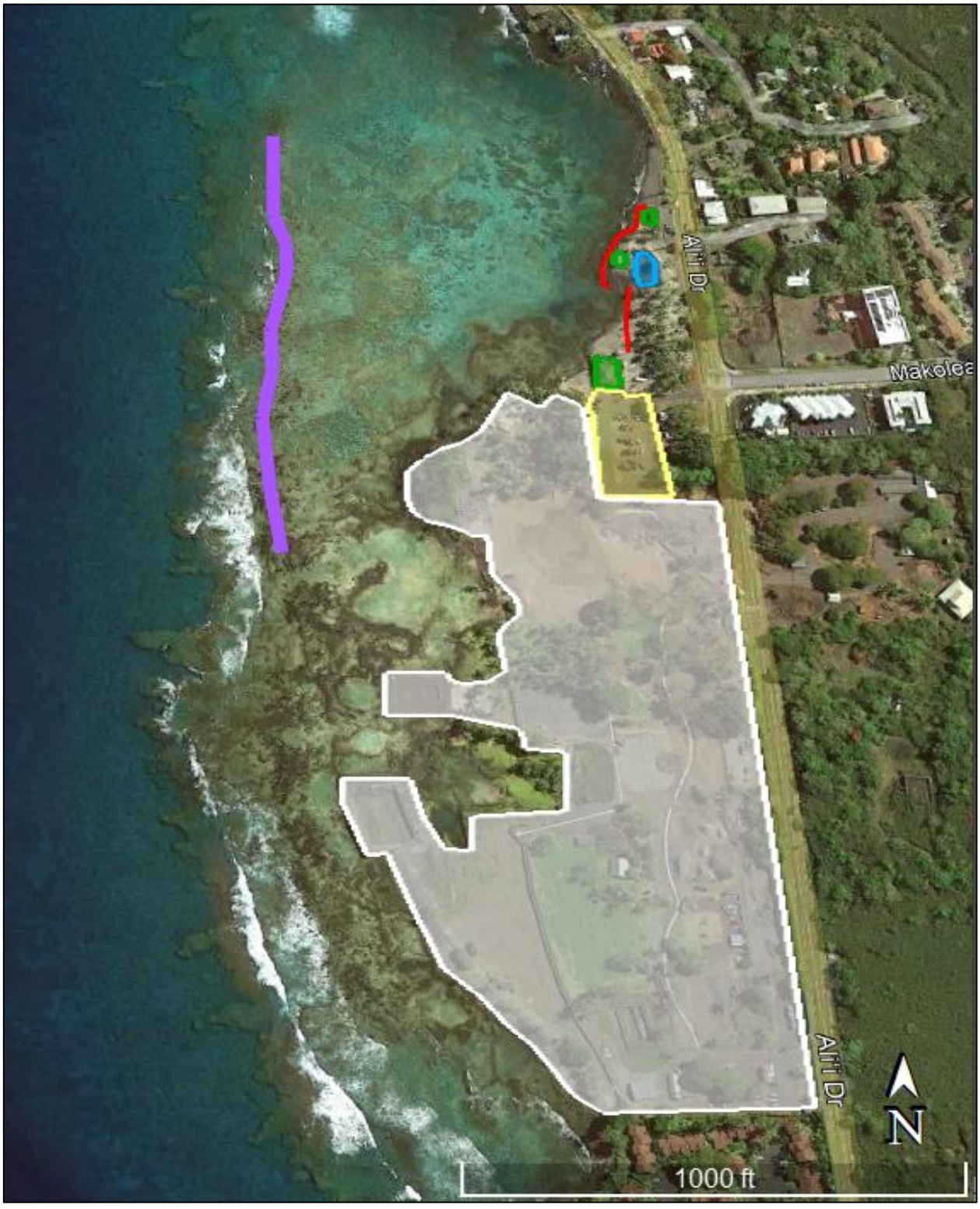

Figure 2. Features of Kahaluʻu Bay