

‘The Situation Is Critical’: Saving This Maui Beach Won’t Be Easy Or Cheap

Government agencies, scientists, property owners and beachgoers have banded together to find a solution to chronic erosion at Maui’s Kahana Bay.

<https://www.civilbeat.org/2021/05/the-situation-is-critical-saving-this-maui-beach-wont-be-easy-or-cheap/>

May 18, 2021

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LAHAINA, Maui — Perched on Maui’s westernmost edge, nine condominium towers at Kahana Bay offer owners and guests a sweeping oceanfront panorama with distant views of Molokai and Lanai and an up-close seat to the seasonal parade of breaching humpback whales.

But the tradeoff of this water’s edge location is the anticipatory dread of watching the sea steadily erode the beach and the value of the coastal real estate.

The ocean has destroyed condominium pool decks, cabanas, stairs and walkways. Seawalls installed to protect the shoreline have only worsened the problem. Thousands of sandbags piled up are merely a Band-Aid to buy time to find a more lasting solution.

In some places, the beach has completely vanished.

The mounting erosion crisis at Kahana Bay has led nearly 1,000 condo unit owners and one private homeowner to join together to find a comprehensive solution after having exhausted various short-term, piecemeal efforts to thwart the intensifying effects of sea level rise, king tides and storm surges.

Signs of the surf eating away at the beach at Kahana Bay were apparent when the collection of condo buildings on the beach went up in the 1970s, but there were no government rules to dictate how far new construction should be located away from the encroaching shoreline.

The condos have since become symbols of the significant danger of allowing construction too close to shore. At stake is the fate of a half-billion dollars worth of real estate and \$10 million in tax revenue.

Last month the group known as the Kahana Bay Steering Committee offered state regulators a plan to upset the cycle of beach loss and property damage with a three-pronged erosion control project focused on beach restoration.

With an estimated price tag of \$26 million to \$40 million and an undetermined source of funding, the erosion defense described in a draft environmental impact statement promises to grow the vanishing beach by about 65 feet. Currently, less than 6 feet of land separates some of the condominium buildings from the high wave mark.



Concrete sea walls, sandbags and other erosion-control structures were installed years ago at many of the condominiums fronting Kahana Bay in an effort to buy time as rising seas threaten property damage.

The plan is the culmination of many years of collaboration between condo owners, county planners, state regulators and community members who use the beach for recreation and fishing. But with so many social, cultural, economic and legal implications, there are many opinions on the best way forward.

“The conversations are very difficult right now because there really aren’t that many tools in the coastal management toolbox,” said Tara Owens, a coastal hazards specialist with the University of Hawaii Sea Grant Program on Maui.

“You have the extreme solutions like letting things fall into the ocean, which obviously isn’t very desirable,” she said. “Then there are a lot of people in the community who are really interested in seeing some type of retreat from the shoreline. But that’s not very easy or realistic in Hawaii because our property values are so high.”



For nine condominiums perched along the dramatically eroding shore in west Maui, the price of an oceanfront view is worsening vulnerability to king tides, storm waves and rising seas.

A sense of urgency underscores efforts to agree on a path forward as scientific models project sea levels will rise 3 feet by the end of the century.

“The situation is critical,” said Mike Foley, coastal engineer at Oceanit, the Honolulu-based consulting firm that designed the plan. “There’s no time to wait.”

“In fact, Kahana currently has 1,200 feet of sandbags that are an emergency, temporary erosion control measure that is approved by the state and the county to basically protect public health and safety while they develop a long-term, sustainable, resilient plan to manage this crisis,” he said. “And so that’s what this project is about.”

Kickstarting a regulatory approval process that could take several years, Oceanit’s erosion mitigation proposal would replenish a three-quarter mile stretch of beach with sand dredged from three offshore sites.

Seven rock formations known as groins — similar to those installed at Iroquois Point on Oahu — would be constructed to help keep the new sand from eroding. These barriers would jut more than 200 feet, dramatically altering the shoreline.

The plan also calls for fortifying a sand berm barrier at the back of the beach with dredged sand.

In addition, a headland at the north end of the project area, where Kahana Stream flows into the sea, would be reinforced with imported boulders.

All told, the project would return this community’s disappearing beach to its approximate size in 1975.

Federal, county and private funding options are under consideration, but a clear financial plan for the project has not been assembled, according to several people familiar with the project.

The plan accounts for maintenance costs, including replenishing the dredged sand in about 30 years at a cost of millions of dollars.

Engineers anticipate that the rock groins would be able to withstand sea level rise and storm events to remain functional for about 50 years.

‘We Have Entered A New Era’

The plan would have several adverse environmental effects including the loss of coral reef habitat where the rock groins would be built, although planners note that fish may eventually adopt the rock groins themselves as a new habitat.

The groins would also block beach users from being able to swim or snorkel along the contiguous shoreline.

While Kahana Bay community members grapple with the environmental and social concerns raised by the proposed T-shaped groin construction, they are left with few other reasonable options.

Historically, Hawaii has responded to erosion with seawalls and sandbags. But government agencies and communities are largely no longer interested in this approach now that it has become clear that armoring the shoreline, in many cases, merely leads to more beach loss.

Beach replenishment is an increasingly popular option that has been implemented across the state, including Waikiki.



Climate scientists expect more than \$20 billion in ruined buildings and roads around Hawaii as sea levels rise a projected 3 feet by the end of this century.

In addition to the Kahana Bay proposal, beach replenishment is being considered at two other popular west Maui beaches — [Kaanapali Beach](#) and [Napili Bay](#). However the latter two projects focus on importing sand to rebuild the beach and do not call for rock groin construction to keep the new sand in place, which is what’s being vetted for Kahana.

“The rock groins, like the half dozen or so that you see when you fly into Honolulu from the west approaching Pearl Harbor, are expensive,” University of Hawaii climate researcher Chip Fletcher said. “They are, perhaps for those who want to see a natural shoreline, difficult to look at. But we have entered a new era where sea level rise is going to require new sorts of responses from us.”

“If we want to allow a beach to react naturally to sea level rise,” he said, “then we have to figure out how to get out of the way and just let the beach roll landward as the ocean rises.”

There is no blueprint in Hawaii for implementing [a large-scale managed retreat strategy](#), where, theoretically, the threatened buildings would be demolished and rebuilt farther back from shore. Executing such a strategy would require tremendous amounts of political will, community buy-in and money.

“There really is no place for a building that’s threatened by erosion to move in many cases,” said Sam Lemmo, administrator of the state Office of Conservation and Coastal Lands. “Hypothetically, the only way to do it would be to somehow purchase a piece of land somewhere else and build a new building there while you demolish the old one. I just don’t think anybody has the means to afford this kind of thing.”

“It’s great to say we should do managed retreat, but nobody is really coming up with a solution other than just tearing down a building and then all of the people who are invested in it lose,” he said. “And then the county loses the tax base.”

New Setback Rules Would Be More Proactive

About 85% of Maui’s shorelines are presently battling persistent, long-term erosion, researchers say. And the land loss at Kahana Bay is not the worst example of it.

Baldwin Beach Park in Paia has historically suffered the highest rate of erosion of any Maui shoreline, according to Owens.

In 2011, erosion caused the beach park's restroom facility to [collapse into the ocean](#). A portion of a beach pavilion was removed last summer because the shoreline's landward march in the face of sea level rise had undermined the structure.



For nine condominiums set on the soft sands of the dramatically eroding shore in west Maui, the tradeoff for this view is worsening vulnerability to king tides, storm waves and rising seas.

Just down the road, the Paia Youth and Cultural Center has been working with county officials for years to plan a new building leeward from the coast, where erosion is expected to one day make its 1950s coastal building unusable.

Another example of incremental forced retreat is at Kahana Bay, where a condominium several years ago removed a pool cabana that was imminently threatened.

“I think maybe one thing that’s unique in west Maui is that, other than Waikiki, it’s probably one of the only places in Hawaii where we have this really high density development that’s threatened,” Owens said. “And so that makes it all the more challenging to deal with.”

Following a period of monumental coastal erosion, Maui County debuted the state’s first shoreline setback policy in 2003 to regulate how close a building can stand to the ocean.

Now Maui planning officials are weighing whether to further [constrict the county’s shoreline setback rules](#) by incorporating projected future sea level rise conditions in the calculation that determines the setback for permitted structures.

“They’ll have one of the most scientifically based and most protective setbacks probably in the world if they go ahead and adopt this change that would essentially consider modeling that shows the extent of erosion under about a meter of sea level rise,” Fletcher said.

Currently the method for calculating a shoreline setback in Maui County is based only on historical erosion trends and fails to factor in the worsening erosion that’s expected to come with sea level rise.

Shoreline setback policies, however, mainly affect new construction.

“Setbacks are basically a form of managed retreat,” Owens said. “It’s not instantaneous, but when there is new development or when there is redevelopment of previously existing structures, with a strong and proactive setback policy you will be slowly and incrementally moving development out of harm’s way so we can avoid more situations like what’s happening at Kahana.”

Civil Beat's coverage of Maui County is supported in part by a grant from the Nuestro Futuro Foundation.