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Aloha Chair and Councilmembers,

My name is Kai Nishiki. I'm testifying in my personal capacity, but I've also served as a resource to the Bill 9 Temporary Investigative Group, am the former Chair of the West Maui Community Plan Advisory Committee, a member of a working group during the Maui Planning Commission review of the new shoreline and SMA rules, and I've worked with the County on hazard mitigation planning. I offer this testimony in that spirit, as a resource.

As the Council considers what may be the largest County-initiated zoning change in Maui's history, it's important to recall *why* H3H4 zoning is being proposed.

The TIG explicitly cited concerns about long-term impacts to County revenue, including RPT, GET, TAT, and tourism - and discussed ways to mitigate potential financial losses. The TIG also noted that properties located in the Sea Level Rise Exposure Area, or SLR-XA, would *not* produce long-term housing for residents.

That statement alone should give us pause.

If the Council's goal is to protect the County's long-term revenue stream, which is fundamentally tied to a healthy coastal ecosystem, then we must evaluate H3H4 zoning holistically, with climate risk front and center - because we all understand here on Maui, our environment is our economy.

Without amendments or safeguards, this proposal risks increasing property values, mostly for offshore owners, without addressing the very real and escalating risk of aging structures on eroding shorelines.

And that raises a fundamental fiscal question:

Who is left holding the bag when investors bail out on risky end-of-life shoreline properties built in the 1970s?

Investors always look to maximize profits when they exit and sell.

The County's own 2025 Hazard Mitigation Plan warns that coastal erosion leads to declining property values, impacts the tax base, and increases public costs as shorelines move inland. West Maui already leads the County in buildings located within coastal erosion hazard areas.

What is the ultimate real estate mantra?

Location, location, location - which emphasizes that where a property is situated is the most crucial factor for its value, investment potential, and desirability, outweighing even the unit's condition or features because you can change the unit but not the land it's on.

What factors drive value up? Permanence - A great location offers stability and slower depreciation. Prime spots attract more buyers commanding higher prices and pricier rentals yield more value.

Let's look a bit closer at the location of a number of proposed properties looking to transition into H3H4 zoning.

Per the May 22, 2025 planning dept memo, 43 project properties on the Minatoya list, with a total of 2440 units appear to be affected by the 3.2 sea level rise exposure area.

From the County of Maui 2025 Hazard Mitigation Plan, "Coastal erosion may cause beachfront property values to decline, as the beach is lost and the building becomes at risk of flooding or structural damage. Declining property values may impact the county's tax base." "Additionally, the County may need to allocate increasing amounts of funding... as the shoreline moves inland."

The County of Maui has an estimated \$1.2 Billion in replacement cost value of buildings in the Coastal erosion hazard area, and West Maui leads with 162 out of 366 buildings by Community plan area. West Maui also has the highest number of residential and commercial buildings in this hazard zone.

Coastal erosion and sea level rise are already impacting most of these aging properties and within one generation, by 2100 we will likely experience the full catastrophic impacts. This is an existential problem, not to be ignored.

Sea level rise is not a distant forecast, it is happening now. Within the lifespan of this zoning, many of these properties will face loss of beach access, repeated emergency repairs, insurance challenges, and pressure for shoreline hardening.

But there *is* good news.

Maui has an opportunity to learn from and correct mistakes and put guardrails in place by aligning zoning with adaptation pathways, planning for strategic relocation, creating funding opportunities, and requiring shoreline property owners to partner with our community and take responsibility for stewarding public trust resources.

With great privilege comes great kuleana.

Dr. Chip Fletcher, during his presentation to the Maui County Council, " It's almost a scientific law at this point, that we need to get away from the shoreline, that we need to back away from the shoreline, for the safety of our people, for the safety of our infrastructure and our investments, and to allow the shoreline environment to recover."

In 1972, the U.S. Congress adopted the Coastal Zone Management Act which instituted national policies regarding the preservation, protection and restoration of the natural resources within the coastal zone and required states to establish Coastal Zone Management Plans.

The Hawaii State Legislature implemented a state coastal zone management regime with the objective that state actions within the coastal zone give "full consideration to ecological, cultural, historic, esthetic, recreational, scenic, and open space values, and coastal hazards, as well as to needs for economic development." (Hawaii Revised Statutes {205A-4})

In addition to the Coastal Zone Management framework, the Hawaii State Legislature established "special management areas" within the shoreline of the coastal zone "to avoid permanent losses of valuable resources and the foreclosure of management options, and to ensure that adequate access, by dedication or other means, to public owned or used beaches, recreation areas, and natural reserves is provided." (Hawaii Revised Statutes {205A-21})

In Maui County, the Planning Commissions are the designated authority for the special management areas.

So, my request today is simple and constructive:

Before finalizing H3–H4 zoning for properties within the SLR-XA, please convene coastal zone management and climate adaptation experts to develop clear safeguards, requirements, and fiscal protections tied to this zoning.

The plans, policies and management actions we take today will decide whether we have a healthy coastal ecosystem and beaches for our keiki or our shorelines become fields of sandbags, broken seawalls, and collapsed buildings.

I've submitted detailed written testimony with proposed questions and policy considerations for your review, and I'm available to work collaboratively on solutions.

Mahalo for the opportunity to testify.

~Kai Nishiki



Effect of Climate Change on Future Probability

Sea level rise associated with climate change may increase the likelihood of long-term erosion. Warmer ocean water will continue to degrade and destroy coral reefs, leaving coastal areas unprotected from coastal erosion. The **intermediate scenario for Hawai'i estimates 3.9 feet of sea level rise by 2100, with models indicating that Hawai'i will experience sea level rise 16 to 20 percent higher than the global average (Hawai'i State Climate Commission 2022).**

6.1.6 Cascading Impacts on Other Hazards

Coastal erosion and sea level rise have far-reaching impacts on other hazards. Sea level rise can result in **inundation and flooding**, which may **contaminate surface water and groundwater**. Polluted runoff from excessive stormwater can contain sewage and chemicals, leading to annual beach closures around the state.

6.2 VULNERABILITY AND IMPACT ASSESSMENT

To assess Maui County's risk to the coastal erosion hazard, a spatial analysis was conducted using future erosion hazard data for a 3.2-foot sea level rise from the School of Ocean and Earth Science and Technology (SOEST) at the University of Hawai'i. The asset inventories prepared for this HMP (population, buildings, critical facilities) were overlaid with coastal erosion hazard area mapping. Assets with their centroid located in the hazard areas were totaled to estimate the numbers and values at risk from the impacts of flood.

6.2.1 Life, Health, and Safety

Overall Population

Coastal erosion and sea level rise significantly affect human activities in coastal areas and can lead to increased morbidity and mortality. All current and future populations within coastal erosion hazard areas are at risk. Potential impacts include reduced access to medical and emergency services due to transportation network disruptions and loss of power necessary for medical equipment.

Eroded beaches and dunes can make people more susceptible to coastal flooding and storm surges. The increased exposure to coastal flooding can necessitate evacuations for households farther inland during hurricanes and coastal storm events. Coastal flooding poses significant risks similar to those associated with general flooding. These include heightened vulnerability to sewage spills and water contamination, particularly if water and wastewater treatment facilities are located within coastal erosion hazard areas.

As shown in Table 6-2, there are 1,496 persons located in the coastal erosion (3.2-foot scenario) hazard area; the West Maui Community Plan Area has the greatest vulnerable population at 763 persons, or 3.5 percent of the total planning area.





Table 6-2. Population in the Coastal Erosion (3.2-Foot Scenario) Hazard Area

Community Plan Area	Total Population (2023 ACS)	Population in the Coastal Erosion (3.2-Foot Scenario) Hazard Area	
		Number of Persons	% of Plan Area Total
Hāna	2,135	0	0.0%
Kīhei-Mākena	29,174	470	1.6%
Lāna'i	3,333	0	0.0%
Makawao-Pukalani-Kula	24,505	0	0.0%
Moloka'i	8,092	0	0.0%
Pāia-Ha'ikū	17,037	86	0.5%
Wailuku-Kahului	58,606	177	0.3%
West Maui	21,749	763	3.5%
Maui County (Total)	164,632	1,496	0.9%

Source: U.S. Census Bureau 2023 ACS, SOEST 2021

Socially Vulnerable Population

Socially vulnerable populations face heightened risks and challenges in adapting to and recovering from the impacts of coastal erosion and sea level rise. Economically disadvantaged individuals and those with physical limitations may struggle to afford or implement necessary adaptations, such as repairs after storms. Those at risk due to inadequate warning include individuals lacking internet access, non-English speakers, and those who do not regularly use communication tools like cell phones or social media. Table 6-3 presents the estimated socially vulnerable populations in the coastal erosion (3.2-foot scenario) hazard area.

Table 6-3. Estimated Populations in the Coastal Erosion (3.2-Foot Scenario) Hazard Area

Community Plan Area	Vulnerable Populations Located in the Coastal Erosion (3.2-Foot Scenario) Hazard Area									
	Persons Over 65		Persons Under 5		Non-English Speaking Persons		Persons with a Disability		Persons in Poverty	
	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total
Hāna	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Kīhei-Mākena	98	1.6%	21	1.6%	13	1.5%	50	1.6%	46	1.6%
Lāna'i	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Makawao-Pukalani-Kula	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Moloka'i	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Pāia-Ha'ikū	14	0.5%	5	0.4%	0	0.0%	7	0.5%	9	0.5%
Wailuku-Kahului	34	0.3%	8	0.3%	9	0.3%	19	0.3%	12	0.3%
West Maui	142	3.5%	51	3.4%	32	3.4%	70	3.5%	73	3.5%
Maui County (Total)	288	0.9%	85	0.9%	54	0.9%	146	0.8%	140	0.9%

Source: U.S. Census Bureau 2023 ACS Vulnerable Population Totals, SOEST 2021





6.2.2 General Building Stock

General building stock in Maui is highly vulnerable to coastal erosion and sea level rise. Coastal erosion can undermine the foundations of buildings and infrastructure, leading to structural failure and increased flooding risks. As shorelines retreat, structures previously considered safe may become exposed to these hazards. Sea level rise exacerbates this vulnerability by increasing the frequency and intensity of coastal flooding and storm surges.

As shown in Table 6-4, there are 366 buildings in the coastal erosion (3.2-foot scenario) hazard area, accounting for 0.8 percent of the County's total general building stock. The replacement cost value for these buildings is an estimated \$1.2 billion, which constitutes 2.3 percent of the County's total inventory replacement cost value. West Maui has the greatest amount of exposure, with 162 buildings in the coastal erosion (3.2-foot scenario) hazard area, or 4.0 percent of all buildings in the Community Plan Area. These buildings account for \$752 million in replacement cost value, or 8.5 percent of the Community Plan Area total.

Table 6-4 Buildings in the Coastal Erosion (3.2-Foot Scenario) Hazard Area

Community Plan Area	Community Plan Area Total Buildings		Buildings in the Coastal Erosion (3.2-Foot Scenario) Hazard Area			
			Number of Buildings		Replacement Cost Value	
	Count	Replacement Cost Value	Count	% of Plan Area Total	Value	% of Plan Area Total
Hāna	930	\$741,266,476	0	0.0%	\$0	0.0%
Kīhei-Mākena	7,613	\$11,692,760,990	137	1.8%	\$381,046,148	3.3%
Lāna'i	1,258	\$1,012,846,136	0	0.0%	\$0	0.0%
Makawao-Pukalani-Kula	8,868	\$6,037,317,698	0	0.0%	\$0	0.0%
Moloka'i	3,056	\$2,384,451,998	0	0.0%	\$0	0.0%
Pā'ia-Ha'ikū	4,316	\$2,686,054,376	23	0.5%	\$18,383,514	0.7%
Wailuku-Kahului	15,444	\$18,302,375,352	44	0.3%	\$34,104,359	0.2%
West Maui	4,063	\$8,896,487,618	162	4.0%	\$752,005,051	8.5%
Maui County (Total)	45,548	\$51,753,560,644	366	0.8%	\$1,185,539,072	2.3%

Source: USACE NSI 2022, Hawai'i Emergency Management Agency 2022, Niym IT 2022, County of Maui 2024, RSMeans 2024, SOEST 2021

Table 6-5 presents the buildings in the hazard area categorized by general occupancy class. Nearly 80 percent of buildings in the hazard area are residential. The Community Plan Area of West Maui has the highest number of residential (124) and commercial (36) buildings in this hazard area. The Community Plan Areas of Kīhei-Mākena and Wailuku-Kahului have the only industrial buildings (two each) in this hazard area. Kīhei-Mākena has the highest number of buildings classified as government, religious, agricultural, or educational (four).



**Table 6-5. Buildings in the Coastal Erosion (3.2-Foot Scenario) Hazard Area by Occupancy Class**

Community Plan Area	Buildings in the Coastal Erosion (3.2-Foot Scenario) Hazard Area by General Occupancy Class			
	Residential	Commercial	Industrial	Other ^a
Hāna	0	0	0	0
Kīhei-Mākena	107	24	2	4
Lāna'i	0	0	0	0
Makawao-Pukalani-Kula	0	0	0	0
Moloka'i	0	0	0	0
Pā'ia-Hā'ikū	20	1	0	2
Wailuku-Kahului	40	2	2	0
West Maui	124	36	0	2
Maui County (Total)	291	63	4	8

Source: USACE NSI 2022, Hawai'i Emergency Management Agency 2022, Niyah IT 2022, County of Maui 2024, SOEST 2021

a Other = Government, Religion, Agricultural, and Education

6.2.3 Community Lifelines and Other Critical Facilities

Coastal erosion and sea level rise pose significant threats to community lifelines and critical facilities. They can undermine roads, scour bridges, and expose underground utilities, leading to destabilization and damage.

In many coastal areas, major roads and highways are vulnerable due to their proximity to the shoreline. For example, Honoapi'ilani Highway, Lower Honoapi'ilani Road, Kahului Beach Road, and North and South Kīhei Roads are located within coastal erosion hazard areas. These roads are essential for transportation and connectivity, and their exposure to erosion can lead to severe disruptions. If coastal erosion renders a section of a road or bridge impassable, it can block access to other roads or critical locations, disrupting transportation and emergency response efforts.

When utility lines are compromised, the functionality of water, sewer, gas, and electricity systems may be affected, impacting the entire community. The extensive geographic spread of roads and utility lines increases their likelihood of being impacted by coastal erosion, and relocating them out of hazard areas is often challenging.

Table 6-6 summarizes the number of community lifelines in the coastal erosion (3.2-foot scenario) hazard area. Overall, in Maui County, there are eight facilities in the coastal erosion hazard area. Five of those eight are in the West Maui Community Plan Area.



Table 6-6. Number of Facilities in the Coastal Erosion (3.2-Foot Scenario) Hazard Area

Community Plan Area	Number of Facilities in the Coastal Erosion (3.2-Foot Scenario) Hazard Area, by Lifeline Category								Total Facilities in Hazard Area		
	Communications	Energy	Food, Hydration, Shelter	Hazardous Materials	Health & Medical	Safety & Security	Transportation	Water Systems	Other Critical Facilities	Count	% of Plan Area Total
Hāna	0	0	0	0	0	0	0	0	0	0	0.0%
Kīhei-Mākena	1	0	0	0	0	0	0	0	0	1	2.9%
Lāna'i	0	0	0	0	0	0	0	0	0	0	0.0%
Makawao-Pukalani-Kula	0	0	0	0	0	0	0	0	0	0	0.0%
Moloka'i	0	0	0	0	0	0	0	0	0	0	0.0%
Pā'ia-Haiku	0	0	0	0	0	0	0	0	0	0	0.0%
Wailuku-Kahului	0	0	0	0	0	0	0	2	0	2	2.0%
West Maui	0	0	0	0	0	2	0	3	0	5	12.5%
Maui County (Total)	1	0	0	0	0	2	0	5	0	8	2.9%

Source: Hawai'i Emergency Management Agency 2017, SOEST 2021



6.2.4 Economy

Coastal erosion and sea level rise can have extensive economic impacts in Maui County. According to the Hawai'i Climate Change Mitigation and Adaptation Commission 2017 report, potential economic losses (including all structures and land) across the island could be \$4.1 billion with 1.1 feet of sea level rise and \$12.9 billion with 3.2 feet of sea level rise (HCCMAC 2017).

Losses occur directly due to damaged structures and infrastructure. Business disruptions can occur even if the business is not located directly on the coastline, as customers and employees may be unable to reach them. This leads to forgone sales for the business and tourism taxes for the county. Loss of sandy beaches due to coastal erosion can negatively impact tourism, as visitors tend to avoid shrinking, narrow beaches due to crowding.

Coastal erosion may cause beachfront property values to decline as the beach is lost and the building becomes at risk of flooding or structural damage. Declining property values may impact the county's tax base. Additionally, the county may need to allocate increasing amounts of funding toward beach renourishment or hardening structures to protect beaches, roads, and structures as the shoreline retreats inland.

6.2.5 Natural, Historic and Cultural Resources

Natural Resources

Rising sea levels, increased temperatures, and changing precipitation patterns can lead to habitat loss and degradation, affecting species that depend on these areas, such as native fish, birds, and plants. Endemic species, which have evolved in specific microclimates, face increased stress and potential extinction. Coastal erosion worsens habitat loss by eroding shorelines and altering coastal ecosystems. Sea level rise can inundate coastal habitats, further stressing native species and ecosystems.

must protect
County Budget by
restoration of healthy
shoreline
♡♡♡

Historic Resources

Historic resources, including historic buildings, structures, and archaeological sites, are at risk from rising sea levels and resulting increased flooding, which can cause structural damage. Coastal erosion can undermine foundations and lead to the collapse of historic structures. Increased flooding and erosion can wash away archaeological sites and artifacts.

Cultural Resources — Dept of Oiwi Resources

— Ka
pa'akai
Analysis

The health of natural landscapes is closely tied to Native Hawaiian cultural identity and heritage, and changes to these landscapes can disrupt cultural connections and practices. Resources such as freshwater streams and springs hold significant value for Native Hawaiian communities. Coastal erosion and sea level rise can degrade sacred sites and cultural landscapes, leading to ground instability and loss of culturally significant areas. The availability of native plants and materials essential for cultural practices may decline, affecting cultural continuity. Erosion can degrade sacred sites and cultural landscapes.





6.2.6 Identified Vulnerability Issues

The County has identified the following vulnerabilities related to this hazard:

- High tides and annual high surf exacerbate coastal erosion, especially in areas with structures and infrastructure located at sea level. Potential solutions include moving roads inland, raising roadways, or providing shoreline protection; however, all of these options come with a significant cost to the County.
- Critical facilities located along the shore are not flood-proofed to prevent water damage from flooding or the ocean. These facilities will eventually need to be relocated to a higher elevation.
- 87 percent of public survey respondents indicated that they are concerned about coastal erosion but solutions are handicapped by funding gaps, state and local laws, and negative public perception of available solutions.

6.3 FUTURE CHANGES THAT MAY AFFECT RISK

6.3.1 Potential or Planned Development

Development in coastal areas can significantly increase the risk of coastal erosion and sea level rise. Construction activities, such as building homes, roads, and infrastructure, disrupt natural coastal processes and can accelerate erosion. Increased development often leads to the removal of vegetation that stabilizes shorelines, further exacerbating erosion. Additionally, development can contribute to climate change through increased greenhouse gas emissions, which accelerate sea level rise. As sea levels rise, coastal areas become more vulnerable to flooding and erosion, posing greater risks to both natural ecosystems and human communities.

In a 3.2-foot coastal erosion scenario, only 16 new developments across Maui County are located within the hazard area, representing 0.5 percent of all new development Countywide. The planning area of Kihei-Makena has the highest number with eight developments (1.6 percent), followed by Wailuku-Kahului with five (0.7 percent), and West Maui with three (0.5 percent). All other planning areas report no new development in the hazard zone. Table 6-7 breaks down the number of new developments by community planning area.

Table 6-7. Number of New Developments in the Coastal Erosion Hazard Area

Community Plan Area	Number of New Development in the Coastal Erosion (3.2ft Scenario) Hazard Area	
Hana	0	0.0%
Kahoolawe	0	0.0%
Kihei - Makena	8	1.6%





Lanai	0	0 0%
Makawao - Pukalani - Kula	0	0 0%
Molokai	0	0 0%
Paia - Haiku	0	0 0%
Wailuku - Kahului	5	0.7%
West Maui	3	0.5%
Maui County (Total)	16	0.5%

Source: County of Maui 2025, SOEST 2021

Don't grow
Population in
hazard zones

6.3.2 Projected Changes in Population

Population growth in coastal areas increases development, resource use, pollution, and pressure on natural defenses, intensifying coastal erosion and accelerating sea level rise. The Department of Business, Economic Development and Tourism (DBEDT) produced population projections for the County from 2030 to 2050. According to these projections, Maui County's population is projected to grow to 173,520 by 2030, 181,000 by 2040, and 184,870 by 2050.

6.3.3 Climate Change

Future climate change will significantly impact coastal erosion and sea level rise in Maui County. Higher sea surface temperatures will cause irregular patterns of heavy rainstorms and intense hurricanes, stressing coastal areas. Warmer ocean waters will degrade coral reefs, making coastal regions more vulnerable to flooding. Sea level rise, driven by melting ice and expanding ocean volume, is projected to reach 3.9 feet by 2100, increasing the risk of coastal erosion and flooding.

6.3.4 Other Identified Conditions



The geographic and environmental characteristics of the shoreline, including sandy beaches, rocky coasts, and cliffs, play a crucial role in determining susceptibility to erosion. Wave energy and current patterns further impact different parts of the coastline, while the availability and movement of sediments contribute to beach replenishment.



Human activities such as coastal development, shoreline hardening, sand mining, and dredging significantly influence erosion rates. Buildings, infrastructure, and hard structures like seawalls and groins can disrupt natural sediment movement, accelerating erosion and reducing the resilience of coastal areas.



Natural defenses, including coral reefs and wetlands, play a vital role in protecting shorelines from wave energy and erosion. Dune systems provide a buffer against coastal erosion and storm surge.



TETRA TECH



6. Coastal Erosion

helping to maintain the integrity of the coastline. Preserving and restoring these natural features is essential for mitigating the impacts of coastal erosion and sea level rise.



TETRA TECH



EXECUTIVE SUMMARY

Hazard Mitigation Overview

Mitigation is the effort to reduce loss of life and property by lessening the impacts of disasters. It creates safer communities and helps maintain the quality of life. Effective mitigation requires an understanding of all the risks that a community faces and the implementation of short- and long-term strategies to address those risks before the next disaster.

Mitigation planning is the process of identifying the hazards that impact a community, analyzing the risks that those hazards pose, identifying actions to reduce losses from the hazards, and establishing a process to implement the actions. Maui County has developed a hazard mitigation plan (HMP) to reduce risks from disasters to the people, property, economy, and environment within the County. This HMP updates the 2020 Maui County HMP. It includes countywide assessment of hazards, risk, and capabilities. The HMP complies with federal and state hazard mitigation planning requirements to establish the County's eligibility for funding under Federal Emergency Management Agency (FEMA) grant programs.

The Planning Process

Overall Approach

The foundation of all mitigation plans is an inclusive, well-documented planning process with community buy-in. A successful process brings diverse partners together. They will discuss the community's experience with natural hazards and how to meet local risk reduction needs.

To support the planning process, the County accomplished the following:

- Developed a Hazard Mitigation Working Group consisting of key stakeholders, county agencies, and other regional partners
- Involved a wide range of stakeholders and the public in the plan update process
- Reviewed the 2020 Maui County HMP and 2023 State HMP
- Identified hazards of concern to the County to be included in the update
- Profiled the hazards of concern
- Estimated the inventory at risk and potential losses associated with these hazards
- Reviewed and updated the mitigation goals
- Reviewed mitigation strategy and actions outlined in the 2020 HMP to indicate progress
- Developed new mitigation actions to reduce the vulnerability of assets from hazards of concern
- Developed mitigation plan maintenance procedures to be executed after obtaining approval of the plan from the Hawai'i Emergency Management Agency (HI-EMA) and Federal Emergency Management Agency (FEMA)



**29. Implement Climate Action and Resiliency Plan**

Lead Agency:	Mayor's Office of Climate Change, Resiliency, and Sustainability
Supporting Agencies:	Emergency Management Agency
Hazards of Concern:	All Hazards
Description of the Problem:	Increased development, tourism, and environmental impacts have exacerbated community, cultural, and environmental challenges
Description of the Solution:	Implement the Maui Climate Action and Resiliency Plan to secure the people, infrastructure, and natural systems of Maui County. Potential mitigation projects include but are not limited to public education, buyout programs, building codes, GIS mapping, emergency power for critical facilities, critical infrastructure resilience studies, water storage, water re-use, stormwater management, cesspool conversions, resilience hubs, evacuation route planning, low impact development, open space conservation, wetland restoration, and marine resource management
Estimated Cost:	High
Potential Funding Source:	FEMA Hazard Mitigation Grant Program, FEMA Pre-Disaster Mitigation Grant Program
Implementation Timeline:	One to five years
Goals Met:	Goal 1. Protect the life, health, safety and welfare of Maui County residents and visitors Goal 2. Promote the long-term resilience of the County's economic, environmental, historical and cultural resources Goal 3. Protect and adapt property and infrastructure from the impacts of natural hazards and climate change Goal 4. Improve awareness and mitigation of risks associated with natural hazards and climate change Goal 5. Enhance the implementation of this Hazard Mitigation Plan through active involvement and Plan integration across all County Departments
Benefits:	Action will provide a long-term reduction of risk for life and property.
Mitigation Category:	Local Plans and Regulations, Structure and Infrastructure Project, Natural Systems Protection, Education and Awareness Programs
CRS Category:	Preventive Measures, Property Protection, Public Information, Natural Resource Protection, Structural Flood Control Project, Emergency Services
Priority:	Medium





28. Beach and Dune Restoration

Lead Agency:	Department of Planning
Supporting Agencies:	Maui Department of Parks & Recreation, Hawai'i Department of Land and Natural Resources, UH-Sea Grant
Hazards of Concern:	Coastal Erosion, Flood, Hurricane, Tsunami
Description of the Problem:	Coastal erosion is having widespread impacts on Maui, and these conditions are expanding and worsening in the face of sea level rise. Beach and dune restoration has been proposed and planned for several sites, although funding has been a major barrier to implementation. Hawai'i state laws prohibit sea walls, therefore armoring the shoreline is not an option. Most federal grants do not allow beach nourishment.
Description of the Solution:	Support beach and dune restoration solutions that limit coastal erosion and protect life and property. Per Hawai'i state law, this include promoting living shorelines projects instead of shoreline hardening where feasible. Specific projects may include streamline permitting for beach restoration, update dune restoration guidance, protect and restore coral reef systems, provide dune restoration training to county officials and the public, develop an outreach initiative to encourage or establish new dune restoration volunteers/stewards, and install ADA compliant dune walkovers in identified locations.
Estimated Cost:	High
Potential Funding Source:	NOAA Coastal Resilience Grant, NOAA National Marine Fisheries Service Ecosystem Restoration Grant, FWS Coastal Program, Hawai'i DLNR Beach Fund, Hawai'i Tourism Authority, County Budget
Implementation Timeline:	One to ten years
Goals Met:	Goal 1: Protect the life, health, safety and welfare of Maui County residents and visitors. Goal 2: Promote the long-term resilience of the County's economic, environmental, historical and cultural resources. Goal 3: Protect and adapt property and infrastructure from the impacts of natural hazards and climate change. Goal 4: Improve awareness and mitigation of risks associated with natural hazards and climate change. Goal 5: Enhance the implementation of this Hazard Mitigation Plan through active involvement and Plan integration across all County Departments.
Benefits:	Well-engineered solutions to coastal erosion will protect private property, County-owned property, State-managed conservation lands, and the community resource that is Maui County's beaches. A solution that prevents coastal erosion would have an immediate reduction of risk for life and property.
Mitigation Category	Local Plans and Regulations, Structure and Infrastructure Project, Natural Systems Protection, Education and Awareness Programs
CRS Category	Preventative Activities, Property Protection, Natural Resource Protection, and Public Information
Priority	Medium



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24. Open Space Analysis

Lead Agency:	Department of Planning
Supporting Agencies:	Department of Public Works, Department of Parks and Recreation, Hawai'i Department of Land and Natural Resources
Hazards of Concern:	Coastal Erosion, Flood, Hurricane, Tsunami
Description of the Problem:	<p><u>Open space is the best form of hazard mitigation</u>, although often overlooked because of barriers to implementation, such as availability and cost. However, there has not yet been a comprehensive assessment of existing or potentially available sites to <u>prioritize preservation or acquisition for hazard mitigation and adaptation to future conditions</u>.</p>
Description of the Solution:	Conduct a multivariate GIS analysis to identify and categorize open spaces for the County of Maui to purchase and preserve based on highest return on investment for hydrological capacity and positive impact on flood mitigation.
Estimated Cost:	Low
Potential Funding Source:	Staff Time
Implementation Timeline:	One to five years
Goals Met:	Goal 2: Promote the long-term resilience of the County's economic, environmental, historical and cultural resources.
Benefits:	Long-term benefits of the action are difficult to quantify in the short term
Mitigation Category	Local Plans and Regulations
CRS Category	Preventative Activities
Priority	Medium

113 H 4

Proposed Questions for Coastal Zone Management, Planning, and Related Departments

County of Maui CZM presentations regarding our shorelines often lead with the question, "What do we want our shorelines to look like in the future?" as State and County policies, land use, etc should then support what we want our shorelines to look like. Should the County Council and planning commissions contemplate this as part of the discussions on H3H4 and any accompanying legislation regarding properties located within the SLRXA?

Provide thoughts on proposed H3H4 - SLRXA/SMA/Flood zone/shoreline parcels required to:

- provide shoreline access
- shoreline access parking
- structural integrity assessments,
- a hazard mitigation plan,
- require shoreline certification (which requires submittal of proposed shoreline AND ALSO resolving any encroachments)

First right of refusal for County or State to purchase SLRXA properties with the idea that County own units with some financial potential left until demise?

Restrictions on H3H4 rebuilding in SLRXA to support landward migration of our beaches

Finance and Planning should:

- provide the Council a list of proposed properties based on legally defensible criteria and with consistent application.
- provide financials on the upzoning benefits to public and private property owners.
- Provide comments on how policy that significantly increases value must have corresponding public benefit (must be long term and reliable)

Dept of Planning and CZM - please provide a detailed and comprehensive analysis and history on each SLRXA/flood zone affected shoreline properties including history of development approvals, year approved, environmental review(if any), history of shoreline protection(was a permitted and professionally designed seawall installed or was it a retaining wall/landscape feature that was later repaired etc)

What can the County and property owners expect now and into the future, with estimated timelines on these parcels?

Long-Term Viability & Risk Disclosure

Based on best available science (SLR-XA, erosion rates, storm surge, groundwater rise), **what is the estimated remaining functional lifespan** of shoreline properties located in SLRXA:

- Full exposure
- Very significant exposure
- Significant exposure zones?

At what **sea level rise thresholds** do these parcels:

- Lose shoreline access?
- Request emergency shoreline protection?
- Become unsafe for habitation?
- Trigger abandonment or demolition?

Has the County evaluated whether incentivizing long-term residential investment in shoreline parcels **conflicts with the County's Hazard Mitigation Plan, Floodplain Management Program, and post-disaster recovery policies and programs such as Hookumu hou which provides up to \$600K to folks to purchase non flood zone properties.**

Has the County evaluated whether encouraging long-term residential or vacation rental investment in these parcels **conflicts with the County's Hazard Mitigation Plan, Floodplain Management Program, and post-disaster recovery policies?**

Dept of Public Works, Department of Water Supply and Dept Environmental Management:

Given the increased water usage by short term rentals:

Should installations of potable water submeters for each unit, as discussed in a recent Council committee, be required for H3H4 properties?

Does the County intend to provide offsite infrastructure for recycled water to H3H4 properties, and if so, which ones and when? Should H3H4 properties be required to upgrade their onsite recycled water infrastructure as part of approval process in order to facilitate reduction in potable water use and conservation measures. Since the offsite recycled water infrastructure is paid for by taxpayers and adds value to properties, what is the community benefit or land value capture component?

Dept of Oiwi Resources : Shoreline properties - What impacts to natural and cultural resources? What impacts to traditional and customary practices? Should a Kapaa kai analysis be required of all H3/H4 properties and what mitigation measures are acceptable?

Fiscal Responsibility & County Liability

What is the **projected trajectory of County tax revenue** from SLR-XA shoreline properties over the next:

- 10 years
- 25 years
- 50 years
 - when adjusted for SLR-driven devaluation, insurance loss, infrastructure damage, and disaster response costs?

At what point do these properties transition from being **revenue generators to unfunded liabilities** for the County?

What is the County's **financial exposure** if:

- Emergency cleanups are required,
- Roads, utilities, or shoreline access must be repeatedly repaired,
- FEMA coverage or federal climate funding is reduced or eliminated?

Will the proposed action provide property owners yet additional government approvals of development in hazard prone areas and be used as justification for repairs to existing and new applications for shoreline hardening?

Environmental Review & Public Trust Obligations

Should **environmental review (EA/EIS)** be waived for Council-initiated zoning changes that also require community plan amendments on shoreline parcels originally developed **before the Hawai'i Coastal Zone Management Act (1977)**? Why or why not? Should it be required on SLRXA/Flood zone properties as a requirement for H3H4 zoning?

How does waiving environmental review align with the County's obligation to:

- Protect public trust resources,
- Support natural shoreline processes,
- Avoid incremental shoreline hardening?

What are the **cumulative impacts** of allowing/encouraging redevelopment or reinvestment in multiple SLR-XA shoreline parcels under H3/H4 zoning?

Shoreline Management & Adaptation Pathways

What is the County's **intended objective** for shoreline parcels:

- Continued occupation?
- Eventual retreat?
- Public acquisition and restoration?

If retreat is the eventual outcome, **who pays**, and **when does planning begin?**

Has CZM evaluated whether H3/H4 zoning will:

- Increase reliance on seawalls, revetments, sandbags, groins, or offshore sand mining?
- Undermine the intention of Act 16's prohibition on shoreline hardening for private property?
- Provide additional deve

Equity, Housing, and Consumer Protection

Does H3H4 proposal assist the County in protecting **local families** from:

- Purchasing units that cannot be insured,
- Facing massive deferred maintenance and special assessments,
- Being financially trapped in properties with declining habitability?

Does incentivizing **resident investment in hazard zones** as a default housing strategy encourage continued investment into hazard prone areas?

Does H3H4 upzoning encourage more investment by the vacation rental industry and investors into risky hazard zones? Is this wise?

Should the County consider **full hazard and retreat disclosure** to prospective buyers and lenders for H3/H4 properties(and others) located in the SLRXA?

Process, Transparency & Governance

What would be some suggested bills and or requirements for inclusion in H3H4 to address SLRXA affected shoreline parcels to support the landward migration of our shorelines, protect and support a healthy coastal ecosystem, responsible long term planning and long term impacts to County revenue?

What legislation is **being contemplated but not yet disclosed** that may later apply to H3/H4 properties (e.g., Coastal Kuleana Fee, retreat mandates)?

Please have **coastal science and CZM experts formally present** to the Council in committee as Planning Director Blystone committed to during previous discussions.

Additionally, Dept of Oiwi Resources should evaluate impacts

“ The health of natural landscapes is closely tied to Native Hawaiian cultural identity and heritage, and changes to these landscapes can disrupt cultural connections and practices.” - COM2025 HMP

Shoreline access and parking for shoreline access should be evaluated as conduits for cultural practices. Should Ka Pa’akai analysis be done?

Should all related legislation be vetted **together**, with full disclosure to potential applicants for H3H4 zoning rather than in a piecemeal fashion that risks unintended consequences similar to the Minatoya Opinion?

MANAGING MAUI'S DYNAMIC SHORELINES IN THE FACE OF SEA LEVEL RISE

Status and Trends Briefing for RAM
April 20, 2018

Tara Owens

Coastal Processes & Hazards Specialist

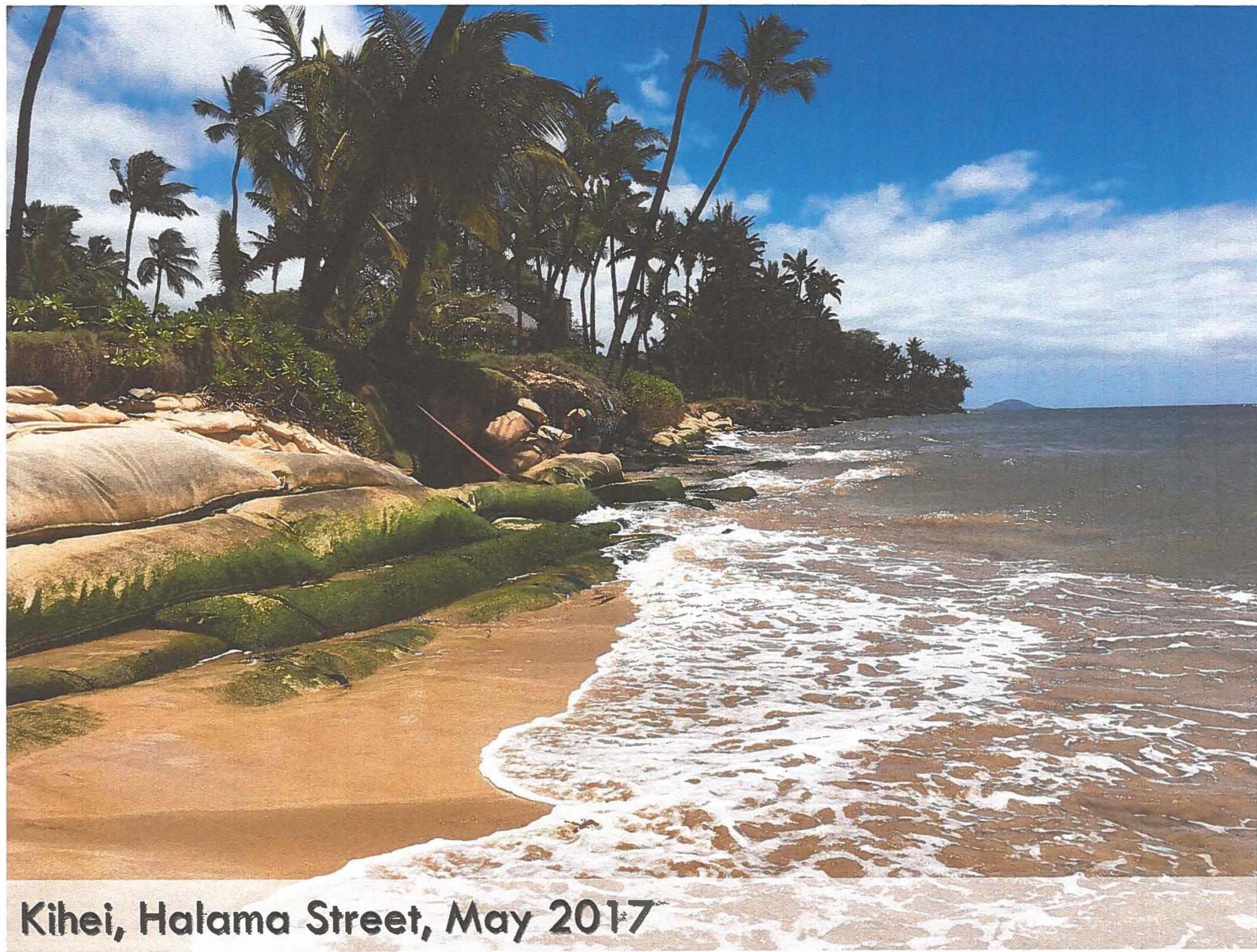
University of Hawaii Sea Grant

taram@hawaii.edu

808-463-3868



04.22.2015



Kihei, Halama Street, May 2017



Baldwin Beach, September 2016



Kaanapali Beach Hotel, January 2018

photo credit: Chris Conger



Kaanapali Beach Hotel, January 2018

photo credit: Chris Conger



Nohonani Condominiums, Honokowai, 2014

FAILED SEAWALLS (25+ SINCE 2007)

KAPALUA - 1

KEONENUI BAY - 5

KAHANA BAY - 3

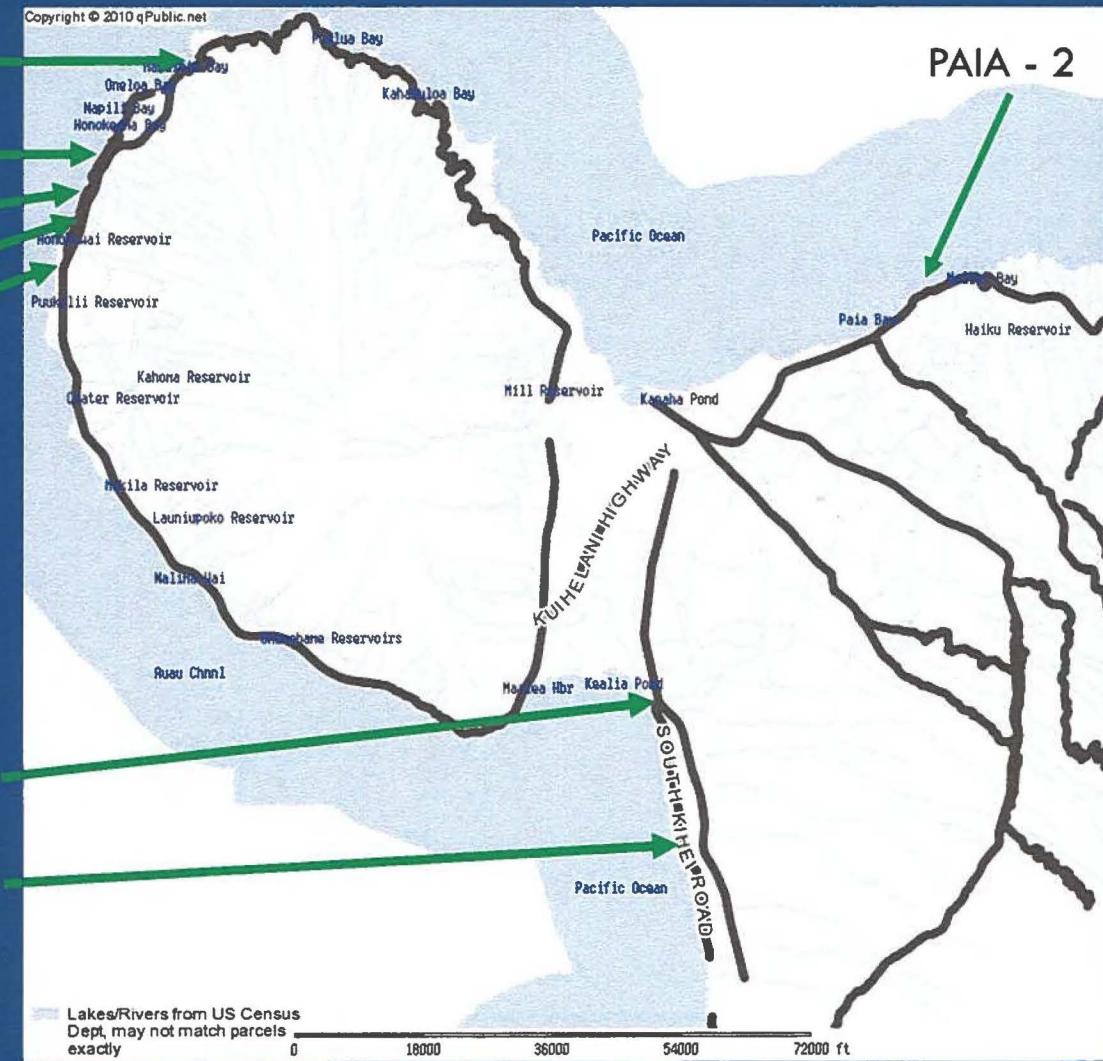
HONOKOWAI - 6

LAHAINA - 3

MAALAEA - 2

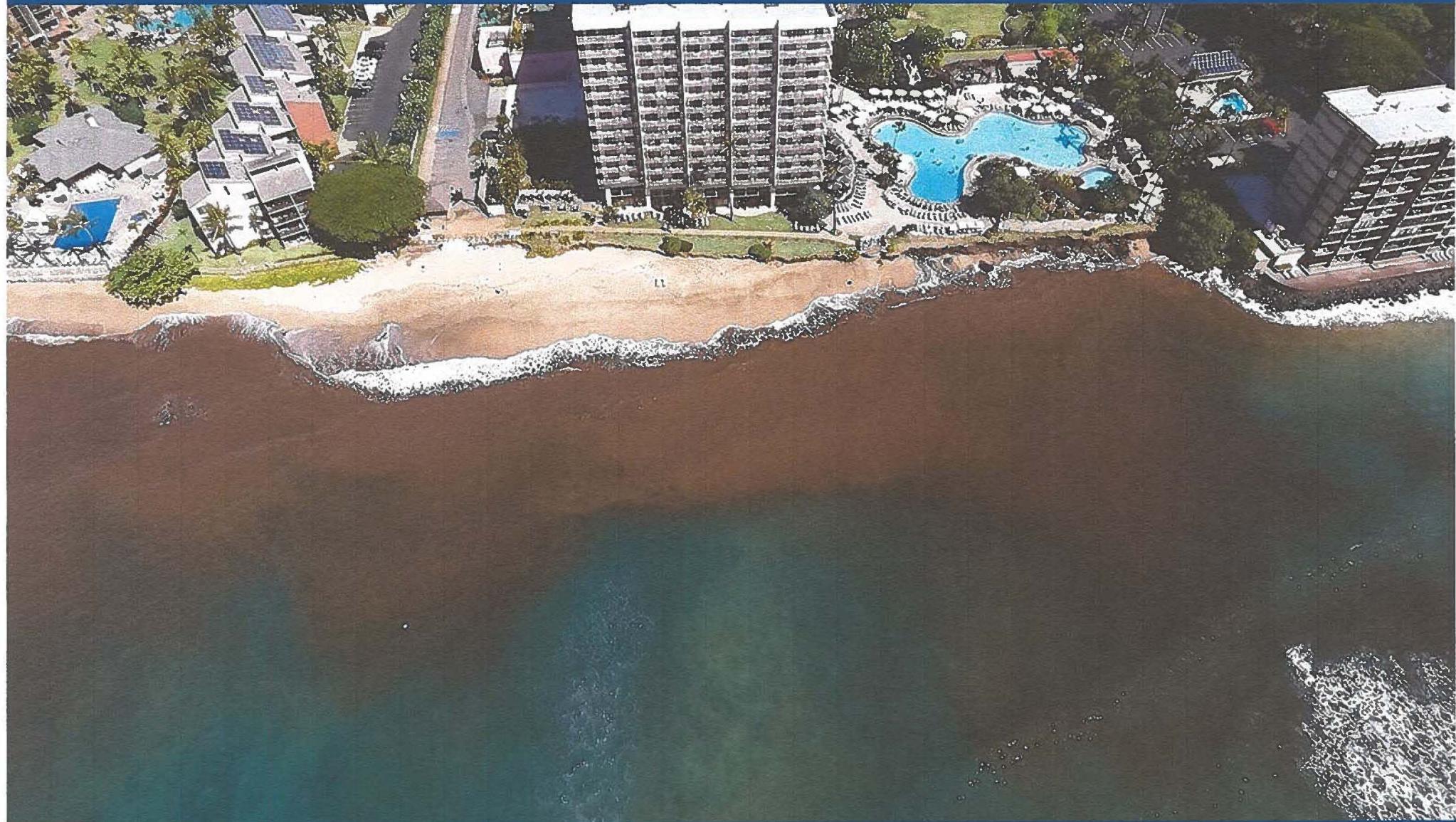
KIHEI - 3

PAIA - 2



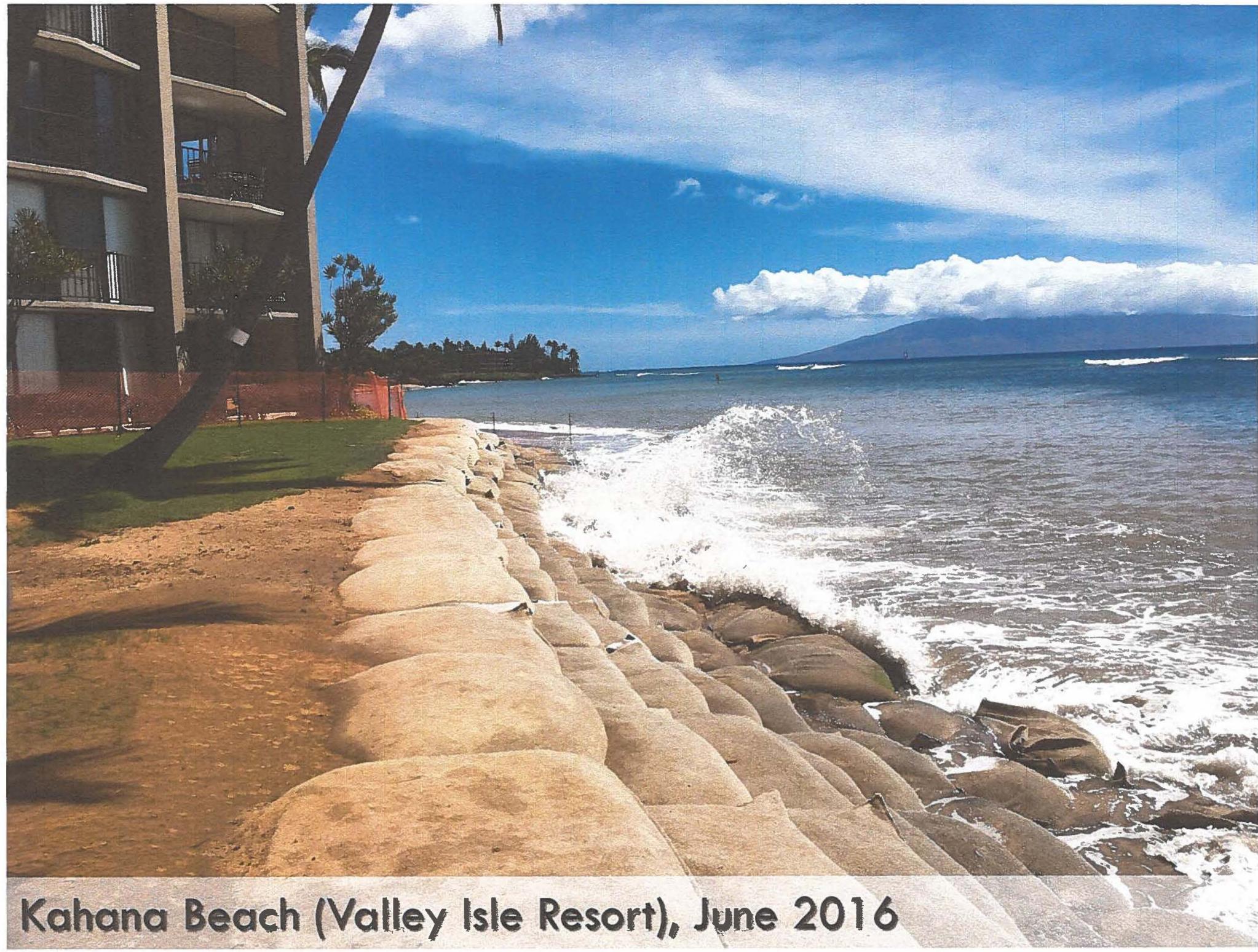


Kaanapali Beach Club, June 2016



Kaanapali Beach Club, September 2017

Photo credit: Don McLeish



Kahana Beach (Valley Isle Resort), June 2016



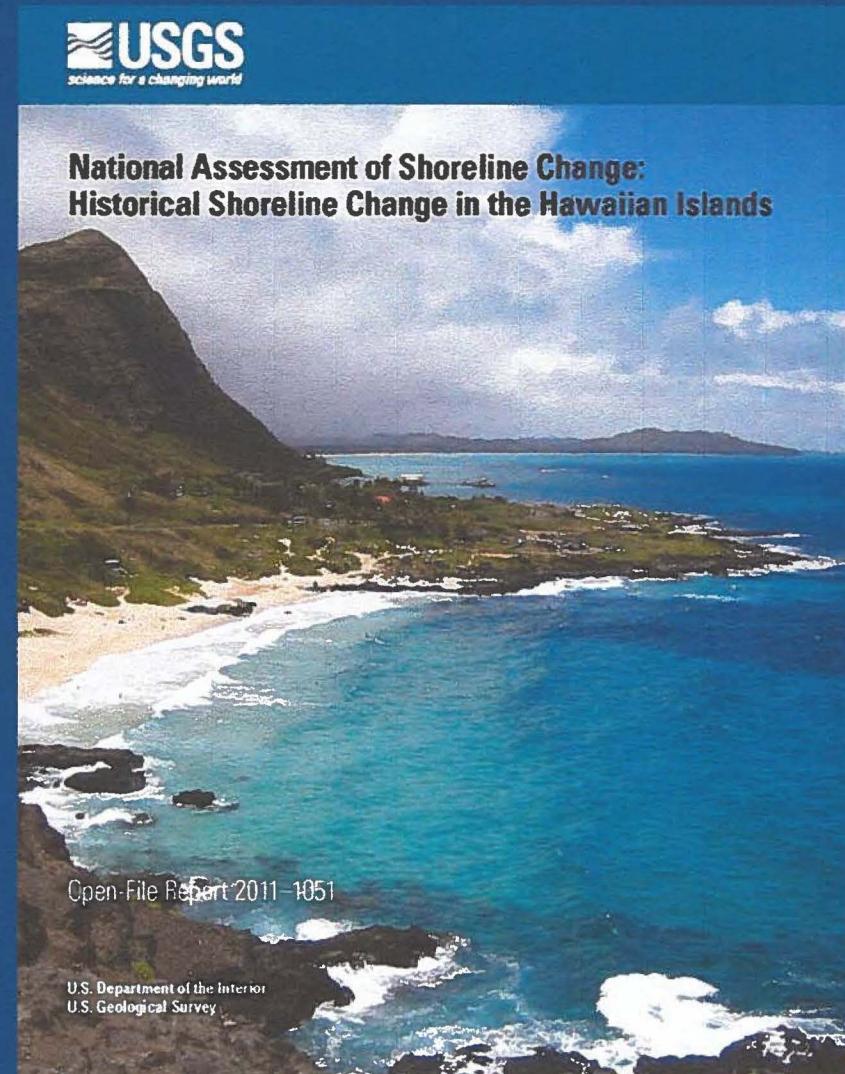
Keonenui Bay, October 2016



Keonenui Bay, retaining wall failure, November 2016

EROSION IS WIDESPREAD ON MAUI

- 85% of Maui shorelines are eroding over the long-term.
- Maui's beaches are experiencing the highest rates of erosion for the Hawaiian islands.
- Maui has the highest percentage of beach loss (11%).



National Assessment of Shoreline Change:
Historical Shoreline Change in the Hawaiian Islands

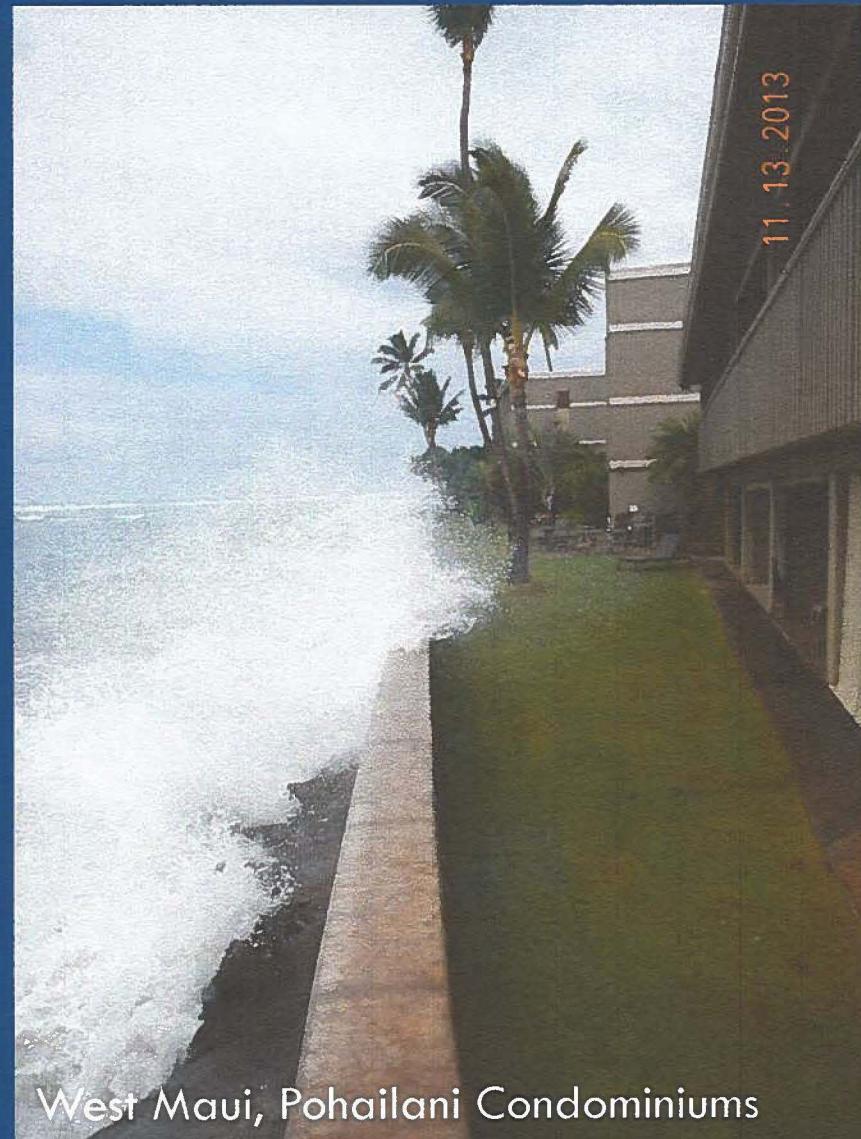
Open-File Report 2011-1051

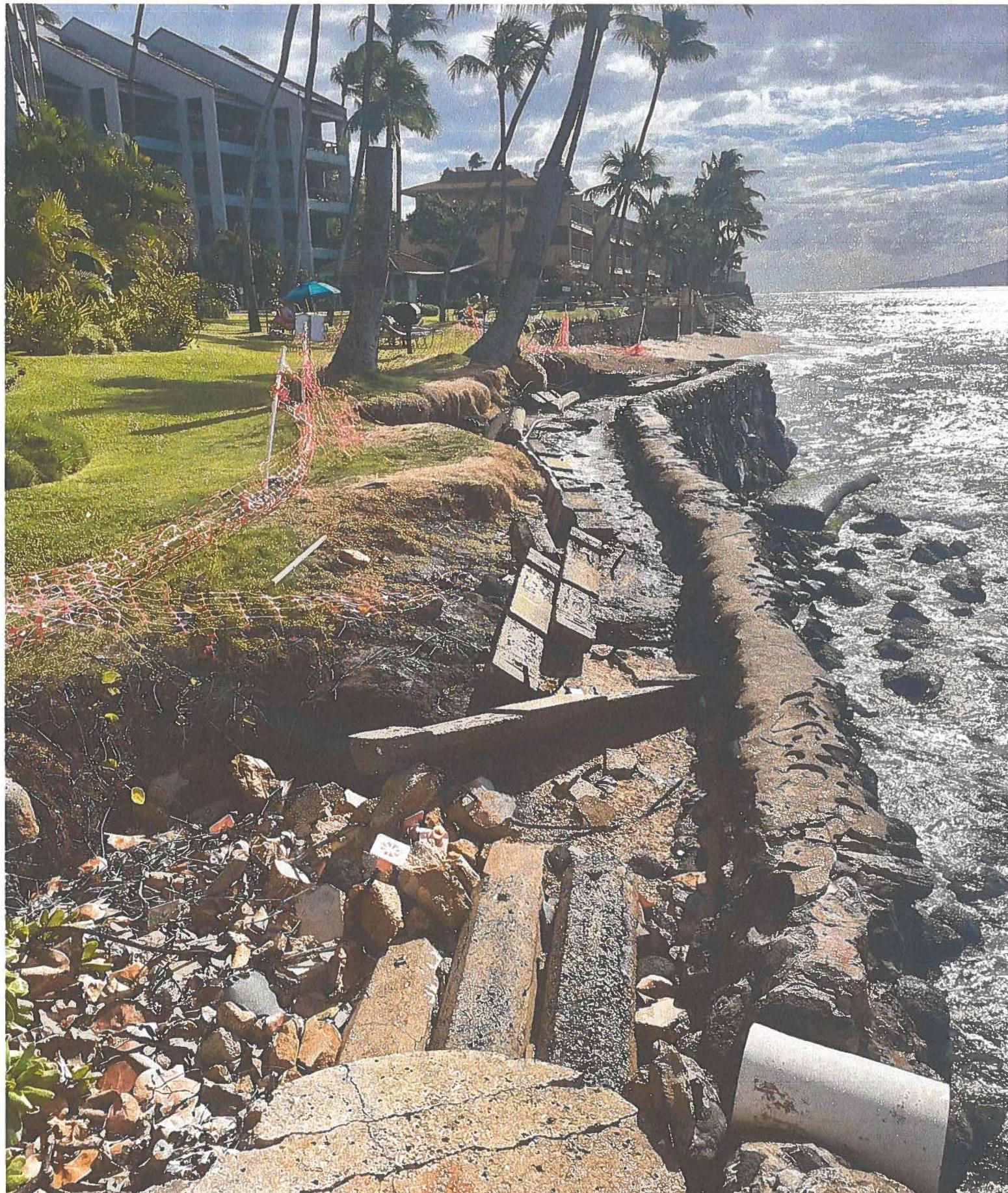
U.S. Department of the Interior
U.S. Geological Survey

COASTAL EROSION

Combination of Causes:

1. Sea-Level Rise
(chronic erosion)
2. Seasonal Wave
Conditions & Storms that
Move Sand
(episodic erosion)
3. Human Impacts –
seawalls, revetments,
and sand mining

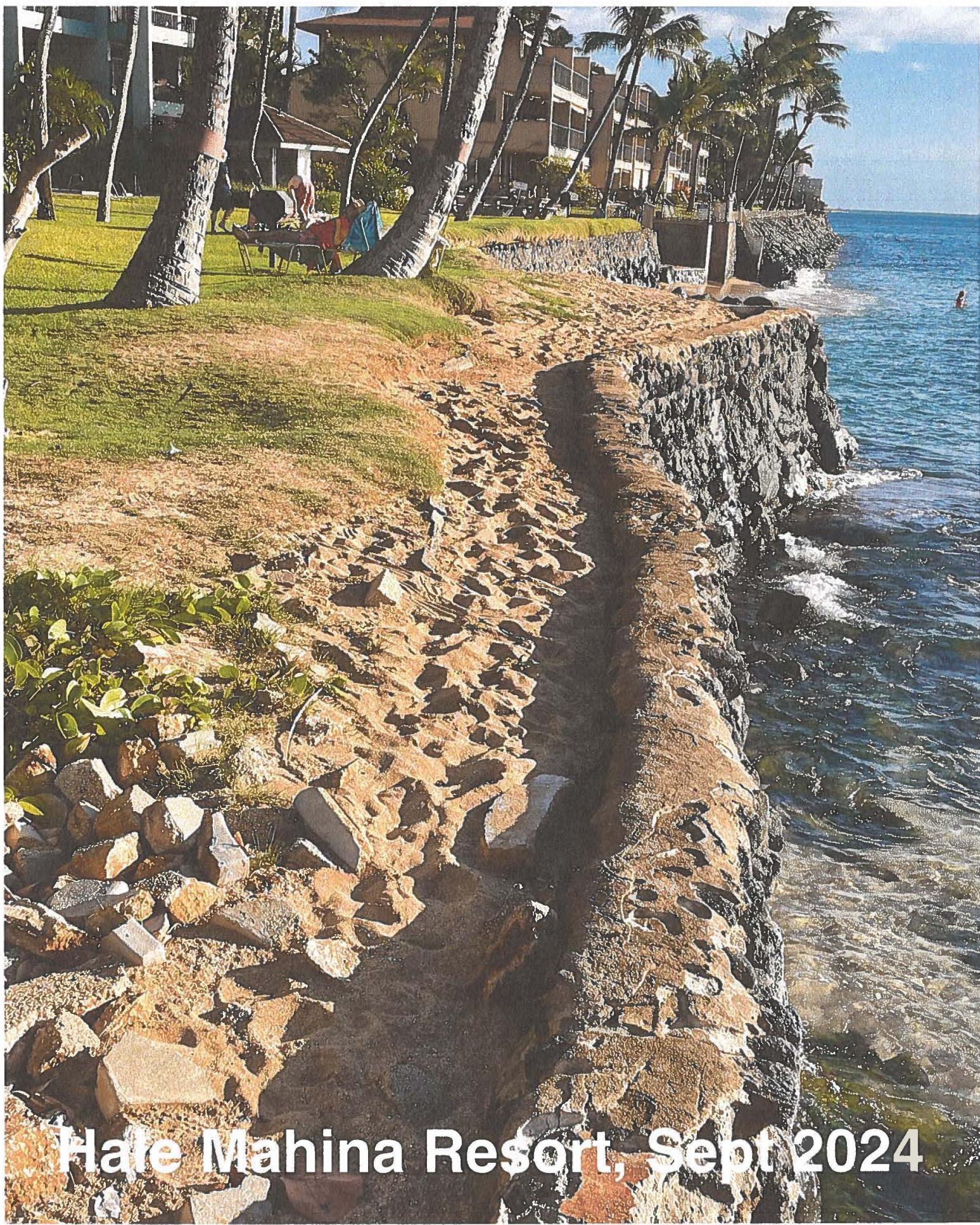




Hale Mahina Resort November 2025



Hale Mahina Resort November 2025



Hale Mahina Resort, Sept 2024



COUNTY OF MAUI
DEPARTMENT OF PLANNING
ZONING ADMINISTRATION AND
ENFORCEMENT DIVISION
ONE MAIN PLAZA
2200 MAIN STREET, SUITE 315
WAILUKU, MAUI, HAWAII 96793
Telephone: (808) 270-7253
E-mail: planning@mauicounty.gov

FILE NO	RFS-20-0001789
PZ NO	
DATE OF NOTICE	May 8, 2024
DATE OF VIOLATION	February 10, 2021
CONTINUING VIOLATION	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
COLLECTED FINE AMOUNT	NONE
CERTIFIED RECEIPT NO.	SEE BELOW

NOTICE OF VIOLATION: SPECIAL MANAGEMENT AREA - MAUI

TO:	7020 0640 0002 1639 1881 Joseph Wlad, President Hale Mahina Beach Resort AOAO 3859 Lower Honoapi'ilani Road Lāhainā, Hawai'i 96761 7020 0640 0002 1639 1928 [REDACTED] [REDACTED] Home Address Lāhainā, Hawai'i 96761	7020 0640 0002 1639 1898 [REDACTED] [REDACTED] [REDACTED] Camarillo, California 93011	7020 0640 0002 1639 1911 [REDACTED] [REDACTED] [REDACTED] Lāhainā, Hawai'i 96761 7020 0640 0002 1639 1904 [REDACTED] [REDACTED] South Pasadena, California 91030
RE:	TMK (2) 4-3-006:041-0000 ADDRESS 3859 Lower Honoapi'ilani Road, Lāhainā, Hawai'i 96761	PERMIT NO.	SMA Permit dated December 14, 1977

I have inspected the above described structure(s) and/or premises and have found the following violation(s) of the Special Management Area Rules for the Maui Planning Commission ("SMA Rules"), as amended: and Hawaii Revised Statutes §205A-28:

NATURE AND EVIDENCE OF THE VIOLATION(S)	Failure to establish compliance with permit condition(s) #7 and #8 set forth in the Special Management Area ("SMA") approval dated December 14, 1977
--	--

Evidence of the aforementioned violation(s) include(s): Site inspection and photographs.

ORDER

Pursuant to §12-202-23 and §12-202-25, SMA Rules, and §205A-32 Hawaii Revised Statutes (HRS) as amended, you are hereby ordered as follows:

X	Establish compliance with conditions 7 and 8 of the December 14, 1977 SMA approvals.	
X	Pay an initial civil fine in the amount of: \$50,000.00	To the Department of Planning ("Planning") by June 7, 2024
X	Pay a daily civil fine in the amount of: \$1,250.00	Per day beginning on May 15, 2024 to Planning if the corrective action described above is not completed by November 4, 2024
X	Pay a daily civil fine in the amount of: \$2,500.00	Per day beginning on November 5, 2024 to Planning if the corrective action described above is not completed by November 4, 2024

Pursuant to Section 205A-32 and Chapter 91, Hawaii Revised Statutes, as amended, these fines are not imposed until you have had an opportunity for a hearing. If you wish to contest any provision of this Notice of Violation and Order (NOV), then within thirty days of the certified mailing of this NOV, you must: submit a request for hearing with the director as required by Title MC-12, Chapter 202, Section 12-202-23(d)(4), Maui Planning Commission ("MPC") Special Management Area Rules ("SMA Rules"); or submit an appeal to the MPC as required by Title MC-12, Chapter 201, Subchapter 8 of the MPC Rules of Practice and Procedure. Pursuant to Section 91-9.5, Hawaii Revised Statutes, as amended, if you submit a timely request for hearing or a timely appeal, we will notify you of the hearing date and time. If you do not submit a timely request for hearing or appeal, this Order will become final pursuant to Section 12-202-23(d)(2), MPC SMA Rules. Submitting a timely request for a hearing or appeal does not stay any provision of this Order. If the director has held a requested hearing, then within 10 days after receiving the director's written decision, you may submit an appeal of the director's decision to the MPC, pursuant to Section 12-202-26, MPC SMA rules. Pursuant to Section 12-202-31, MPC SMA rules, an appeal hearing by the MPC is governed by Subchapter 8 of the MPC Rules of Practice and Procedure.

FOR THE PLANNING DIRECTOR

Print Administrator's Name	JORDAN E. HART	Administrator's Signature	
Print Supervisor's Name	CONKLIN WRIGHT	Supervisor's Signature	
Print Inspector's Name	MELISSA TOKUSHIMA	Inspector's Signature	