

Managing Maui's Dynamic Shorelines in the Face of Sea Level Rise - Recent Updates

Maui County Council DRIP Committee
June 3, 2026

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Which Future? Option A.



Which Future? Option B.



2019



2024





North Kīhei, Waiakoa Bridge, June 24, 2025

Photo: Vernon Kalanikau



South Kīhei Road, January 2017



8-8-25 King Tide - South Kihei Rd Undermine #2
Vernon Kalanikau



Photos: Vernon Kalanikau

South Kīhei Road, Youth Center/Suda Store Area, August 8, 2025



Photos: Vernon Kalanikau

South Kīhei Road, Maui Lu Area, 2024



Photo: Vernon Kalanikau

North Kīhei, August 8, 2025



North Kīhei, March 16, 2026



Pā'ia, Mantokuji Mission, March 2025



May 2026



Keonenui Bay, March 2026



Photo: Mark D

Impacts are Driving Plans, Policies, and Actions



photo: Carol Tu'ua



photo: Don McLeish



photo: Kai Nishiki



Contributions to Coastal Flooding and Erosion

1. Human Impacts - land uses, **seawalls**, **revetments**, and sand mining
2. Seasonal wave conditions and storms (episodic)
3. Sea level rise (chronic)



Front Street, Lahaina: July 2020

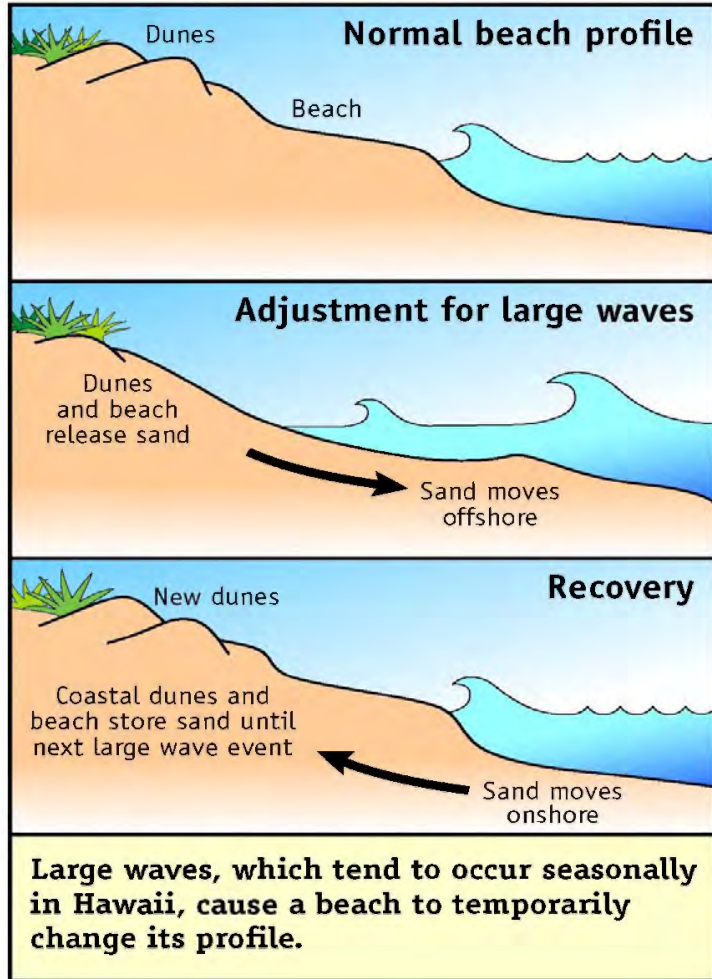
Photo: Don McLeish

1. Humans Impacts – Shoreline Hardening



2. Seasonal Beach Adjustments

Seasonal beach profile adjustments



Kā'anapali Ali'i, Summer South Swell, September 2022



photos: Kai Nishiki

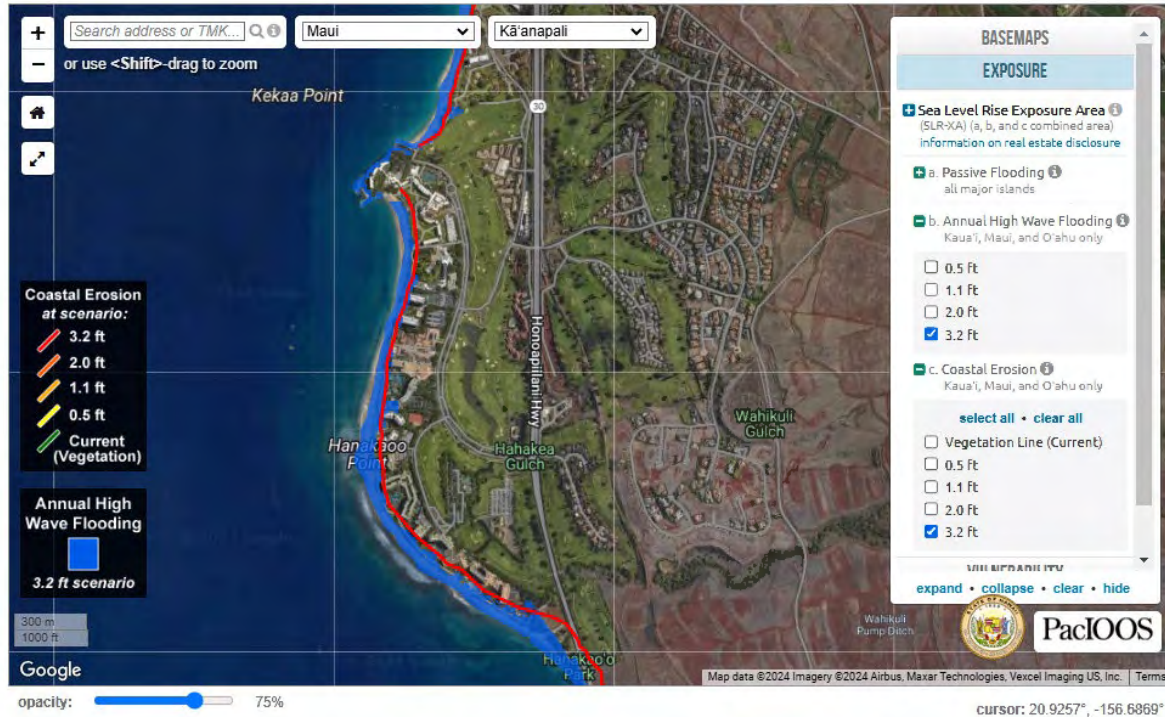
photo: Tiare Lawrence

3. Sea Level Rise (3.2 ft)

Sea Level Rise : State of Hawai'i Sea Level Rise Viewer

An Interactive Mapping Tool in Support of the State of Hawai'i Sea Level Rise Vulnerability and Adaptation Report

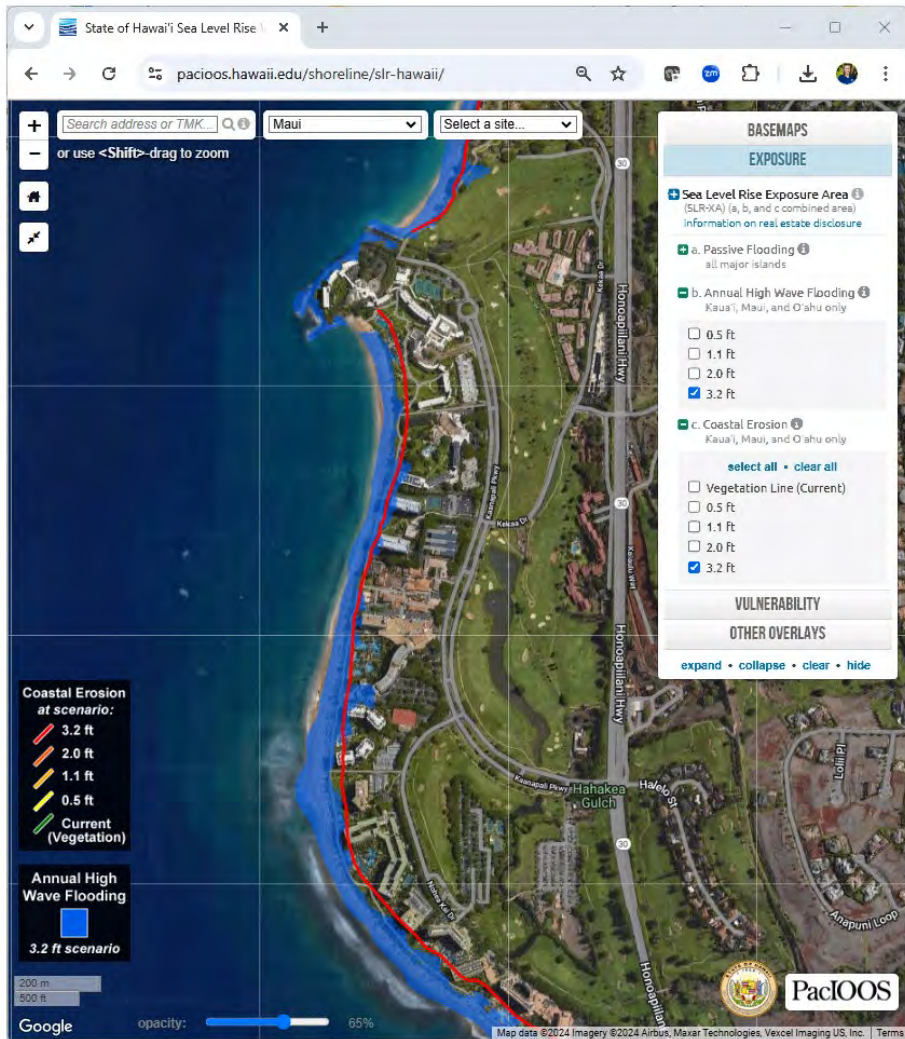
[view full-screen map](#)



Funding provided by the National Oceanic and Atmospheric Administration (NOAA) through their 2016 Regional Coastal Resilience Grants Program.



Statewide Sea Level Rise Policy Integration



Climate & SLR in
Environmental
Assessment
(Act 17, 2018)

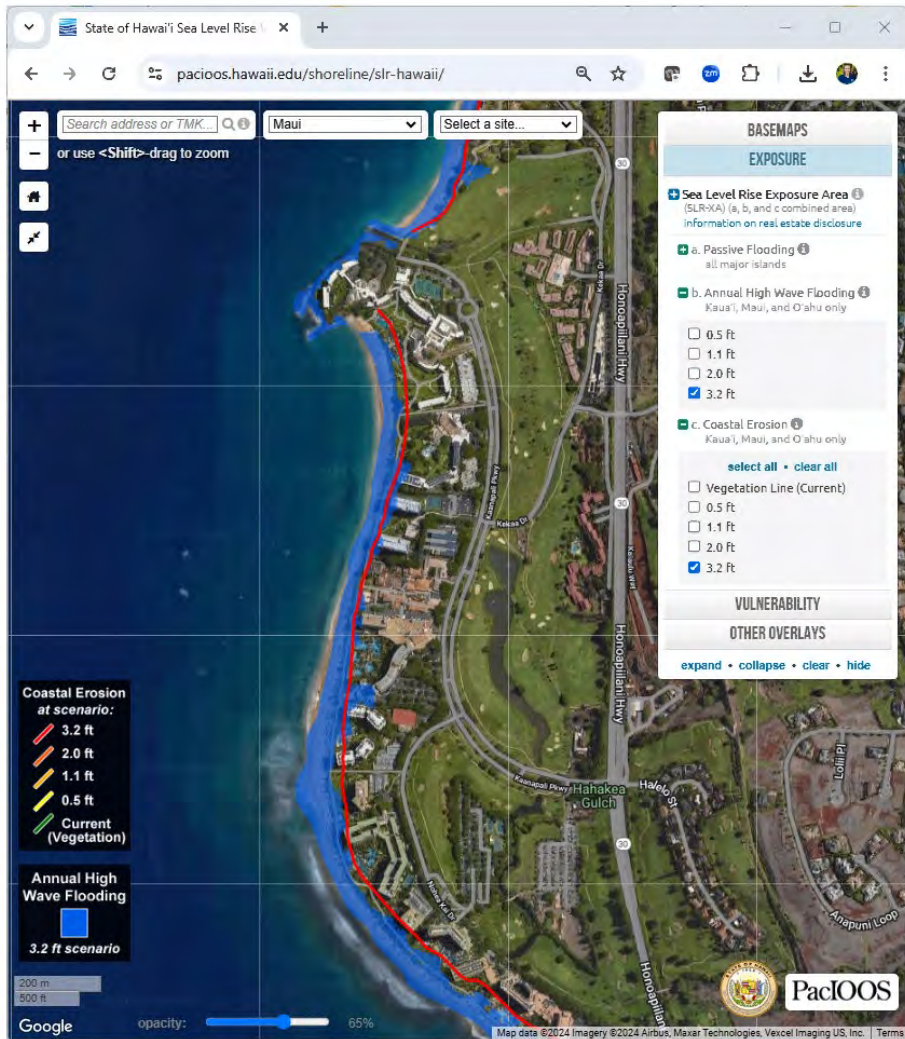
Coastal Zone
Management Act
updates
(Act 16, 2020)

State agencies
assess and plan for
SLR
(Act 178, 2021)

Real estate
disclosure of SLR
risks
(Act 179, 2022)

Maui County Sea Level Rise Integration

Hawaii Sea Level Rise Viewer



Plans, Policies, Projects, and Funds

Vulnerability Assessments
(All Departments)

Community Plans
(Planning Department
Long Range Division)

Hazard Mitigation
Plan
(Maui Emergency
Management Agency)

Shoreline Setback
Rules (2024)
(Planning Department
CZM Program)

Regional Resilience
Projects
(Planning Department,
Maui County Council)

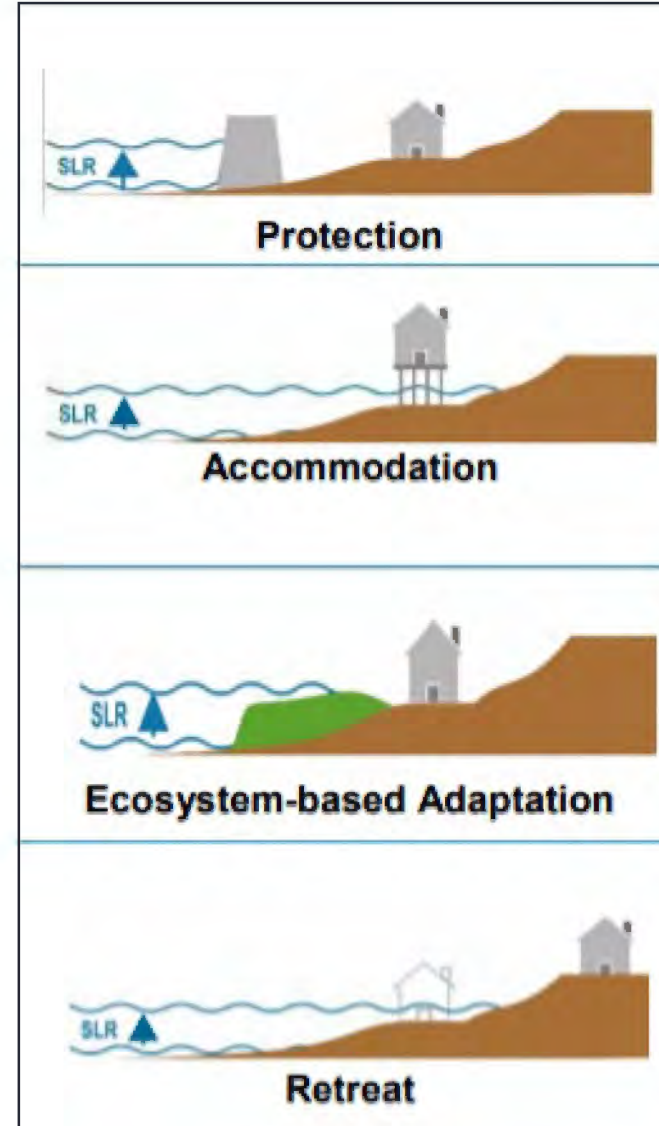
Managed Retreat
Revolving Fund
(2022)
(Maui County Council)

- Kapukaulua Dune Restoration
- Wetlands Overlay Mapping
- Environmentally Sensitive Areas Atlas
- Mā'alaea Resilience Plan
- West Maui Wave Impact Tools
- Moloka'i Resilience Plan

Strategies: Coastal Resilience Toolbox

- **Protect/Resist: Armoring**
(i.e. permanent rock revetment or seawall)
- **Accommodation**
(i.e. elevate, reconfigure)
- **Ecosystem-based Adaptation**
(i.e. dune, beach, wetland, stream and reef preservation/restoration)
- **Managed retreat**
(i.e. setbacks, relocation)
- Do nothing

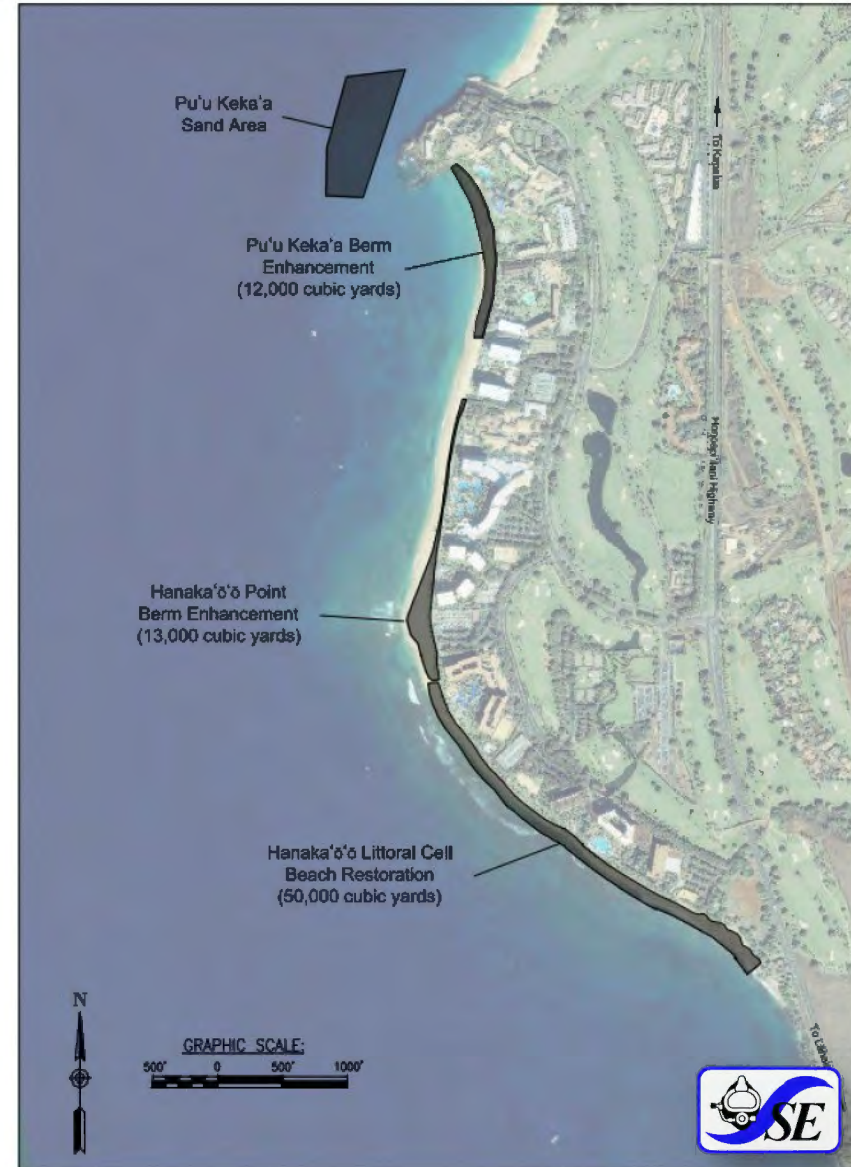
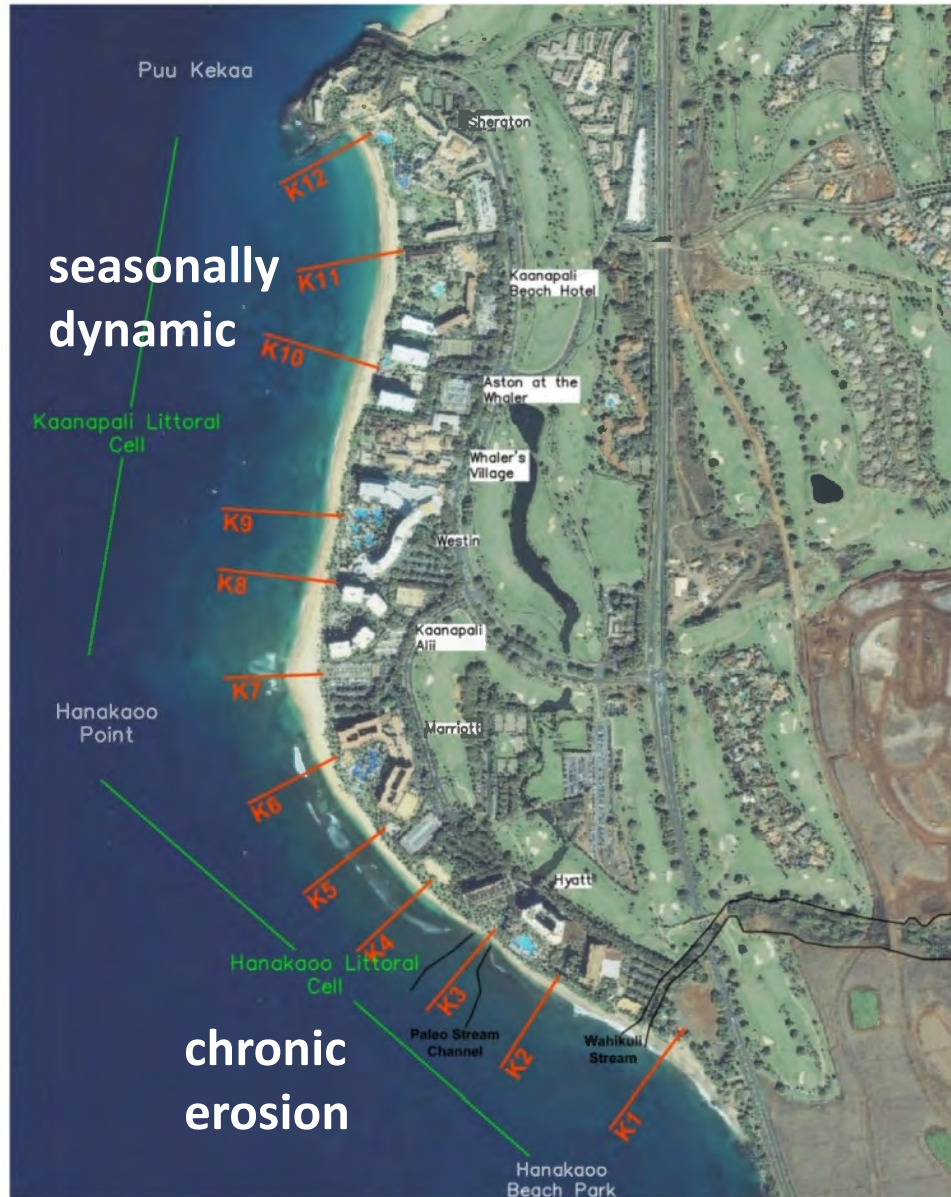
preferred strategies



Shoreline Jurisdiction



Beach Restoration: Kā'anapali Beach (Proposed)

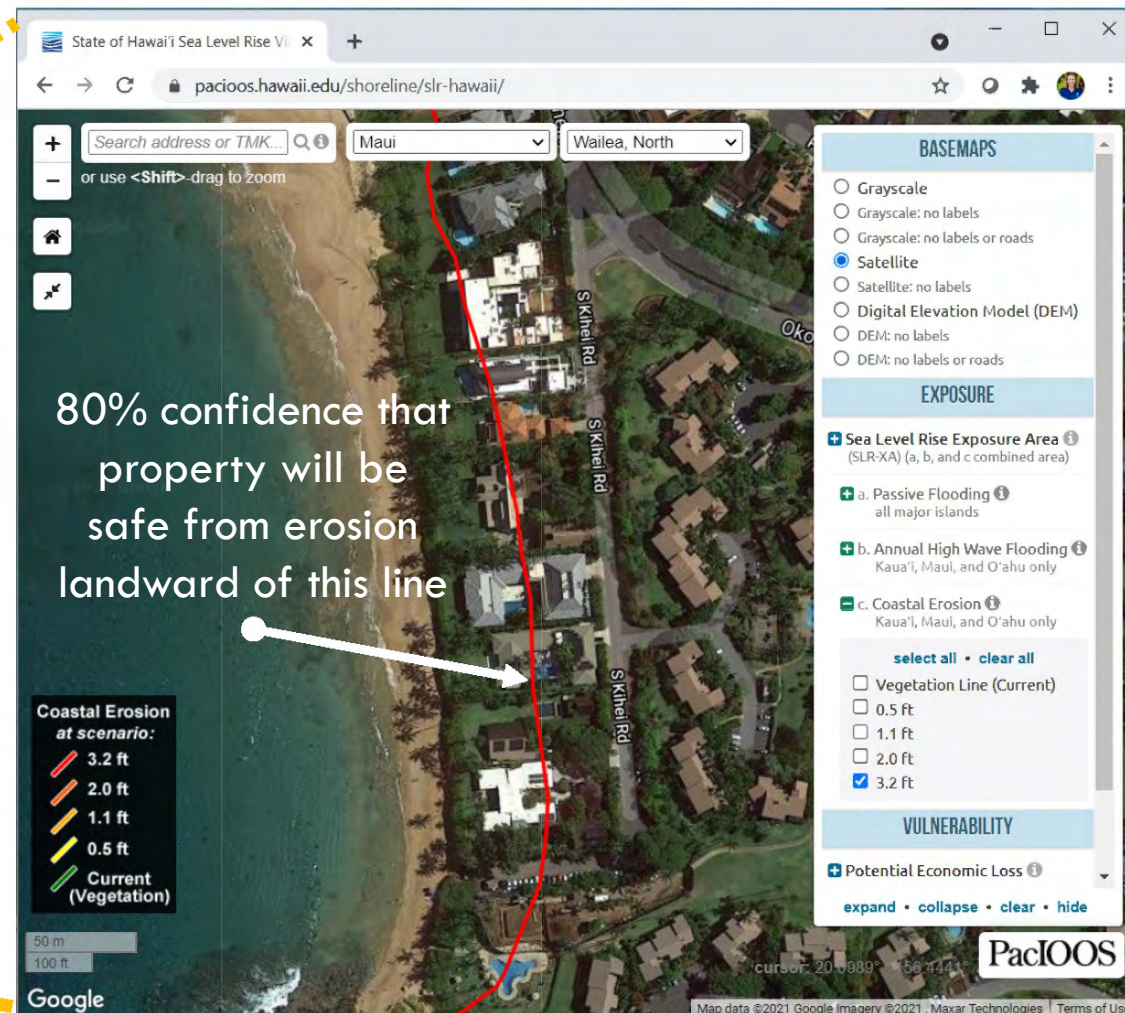
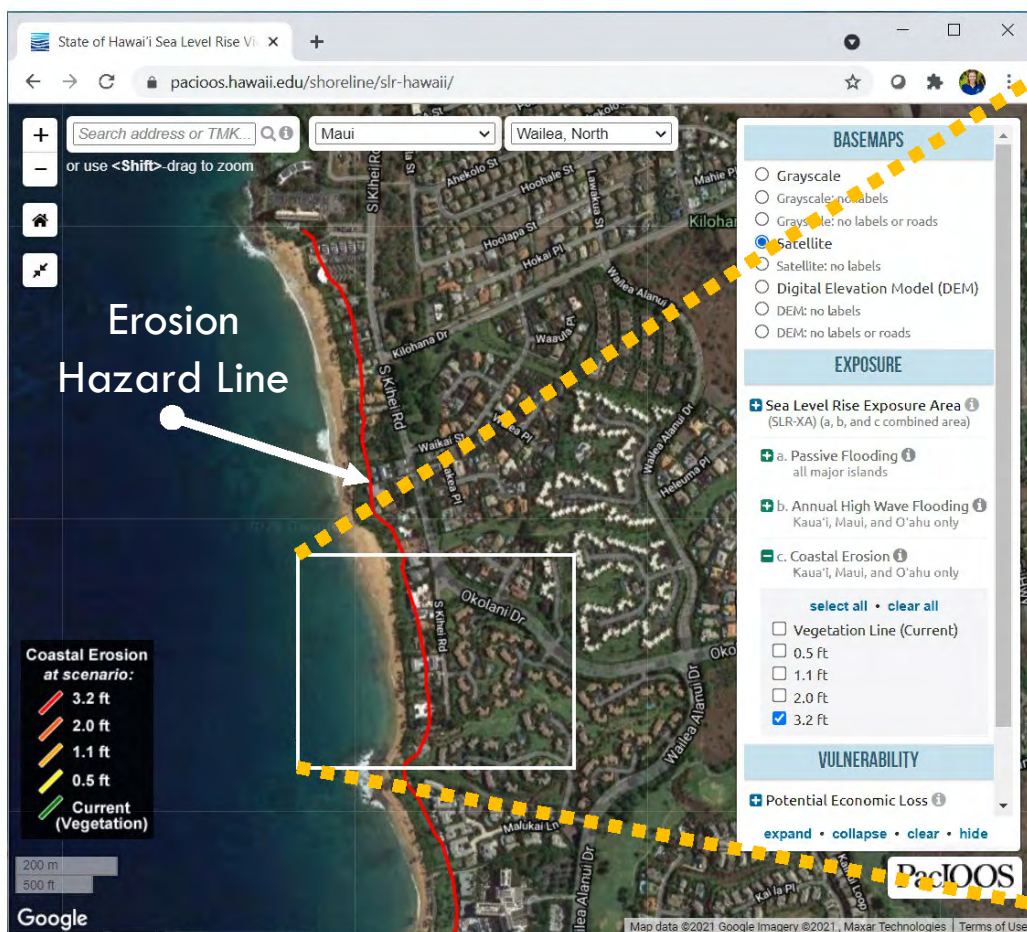


Beach Restoration: Kahana Bay (Proposed)



Retreat Policy: Shoreline Setback Update (Adopted)

Shoreline Setback = Erosion Hazard Line (3.2 ft SLR)



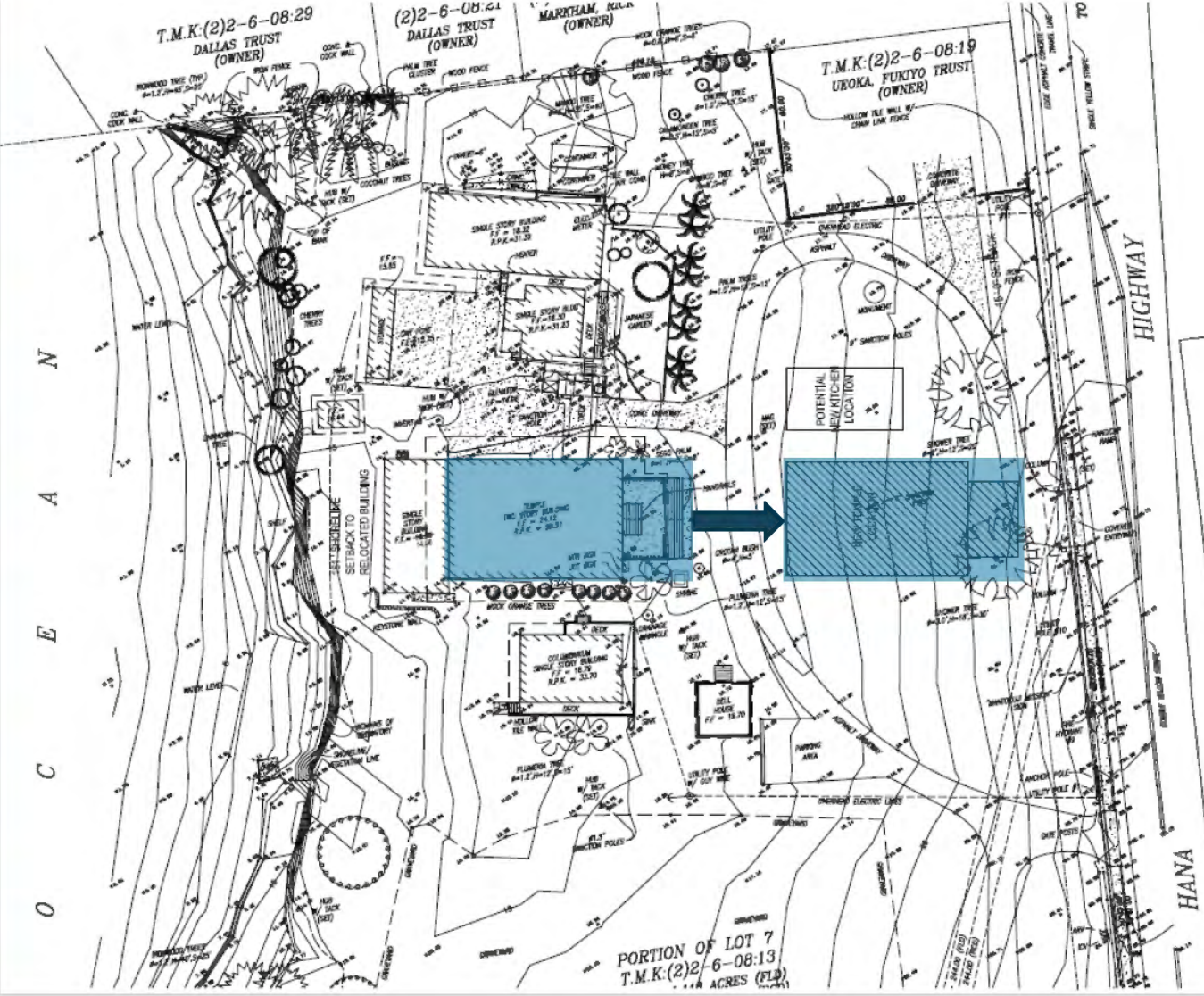
Retreat Project: Paia Youth and Cultural Center (Proposed)



Retreat Project: Paia Youth and Cultural Center (Proposed)



Retreat: Mantokuji Mission (Possible)



Dune Restoration: Dune Restoration Program (ongoing)



Coastal Sand Dunes A Natural Protection

Shifting Sands

Sand dunes play an important role in protecting shorelines and providing habitat for many of the unique plants and animals found in Hawai'i. Coastal erosion is a natural process and the dynamic nature of shorelines can be observed in the seasonal retreat and recovery of many beaches. Rising sea levels, inappropriate land use practices, and shoreline development can accelerate erosion. Therefore healthy coastal dunes are important during high waves and seasonal fluctuations for protection of coastal development from flooding and for releasing sand to maintain beaches.

Please Kōkua

Beach users can help restoration by staying off the dunes and keeping on designated beach paths to avoid trampling the sensitive vegetation. Mahalo!



Restoration

Reducing human foot traffic and replanting native plants contribute to the healthy restoration of sand dunes. Removal of non-native plants can also contribute to the restoration process.

Why the Boardwalks?

Raised boardwalks, also called dune walkovers, are used to keep foot traffic off of the dunes and to protect vegetation that keeps sand in place. Sand fencing is also used to help retain windblown sand to allow the dune to grow.



The logo is available by a commercial grant for limited time period only. For more information on the logo, please contact the University of Hawaii at Hilo, Office of the Registrar, 200 Wai'aleale Ave., Hilo, HI 96720. Phone: (808) 935-2100. Fax: (808) 935-2101. Email: registrar@hawaii.edu



Dune Restoration: Kapalua Seawall Demo & Dunes (Complete)



2020

Dune Restoration: Kapalua Seawall Demo & Dunes (Complete)



Dune Restoration: Kapukaulua (Baldwin Beach) (Ongoing)



<p>KAPUKAULUA DUNE RESTORATION PROJECT</p> <p>171 Bishop St., Suite 2500 Honolulu, HI 96813-2021</p> <p>Tt TETRA TECH</p>	
<p>PROJECT LOCATION: BALDWIN BEACH PARK, MAUI, HI</p> <p>CLIENT INFORMATION: UNIVERSITY OF HAWAII SEA GRANT COLLEGE PROGRAM ON BEHALF OF THE COUNTY OF MAUI AND KAUAI AND SULLY</p>	<p>TI PROJECT No.: 18-0018-17-0000</p> <p>NFWF CONTRACT ID.: 2018-00000000</p>
<p>PROJECT DESCRIPTION / NOTES: DUNE RESTORATION</p>	
<p>ISSUED: FOR ISSUES FOR REVIEW</p>	
<p>VICINITY MAP: </p>	
<p>FOR REGULATORY REVIEW - NOT FOR CONSTRUCTION -</p> <p>G-101</p>	

Final Design Plan



Two Kapukaulua Advisory Group meetings



Aha Moku site visit



Advisory Group member survey (17 survey responses received)



3 informal 'talk story' zoom sessions



Student led interviews onsite with key stakeholders

Dune Restoration: County of Maui Parks “Dune Crew”!!

(Ongoing)



- In FY23, a dedicated “Dune Restoration Crew” was established in the Parks Department
- Three employees, trucks, and equipment
- Dedicated nursery space for growing native plants

Stream Restoration: Kanaio Stream Design (Proposed)



Mahalo Nui Loa



Tara M. Owens
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DRIP Committee

From: Tara Owens <taram@hawaii.edu>
Sent: Wednesday, June 3, 2026 7:41 AM
To: DRIP Committee
Subject: Tara Owens slides - June 3 DRIP Committee
Attachments: Tara Owens_ DRIP Committee_June2026.pdf

Hello DRIP Committee staff!

See attached .pdf file.

Thank you!

Tara

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