



A publication of the University of Hawai'i Sea Grant College Program

# Resilience-Focused Disaster Reconstruction Planning



**PACIFIC ISLANDS**  
CLIMATE ADAPTATION SCIENCE CENTER



**TETRA TECH**

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A project under the program Building Resilience to Coastal Hazards and Climate Change in Hawai'i led by the University of Hawai'i Sea Grant College Program in partnership with the State of Hawai'i Department of Land and Natural Resources and Office of Planning. UNIH-SEAGRANT-GG-16-03. 2017.

Support for this project is provided by the National Oceanic and Atmospheric Administration (NOAA) Regional Coastal Resilience Grants Program and the Department of Land and Natural Resources through the Hawai'i Climate Adaptation Initiative.

Cover image: Storm damage at Hanalei, Kaua'i, May 2018. UHM SOEST-Coastal Geology Group



Sunset Beach, O'ahu. Winter 2015. University of Hawai'i Sea Grant College Program.

Hawai'i's coastal communities are particularly vulnerable to impacts from hurricanes, tsunamis, and other coastal disaster events due to the state's isolated location in the Pacific and development concentrated along low-lying shores. Impacts from infrequent coastal disaster events will become more severe with climate change and sea level rise. Human impacts to coastal environments that act as natural barriers including beaches and reefs also makes our communities more vulnerable to impacts from storms and high waves. The ability to build back safer, stronger, smarter, and faster after a damaging disaster while considering potential impacts to natural and cultural resources is a critical aspect of community resilience. This requires careful planning among government agencies and communities long before a disaster occurs.

Establishing a clear plan to guide rebuilding efforts prepares communities to respond quickly, efficiently, and strategically in the aftermath of a disaster. By incorporating resilience practices into recovery planning, communities can ensure that they build back quickly and efficiently and are better prepared to withstand future disasters.

## Project Description

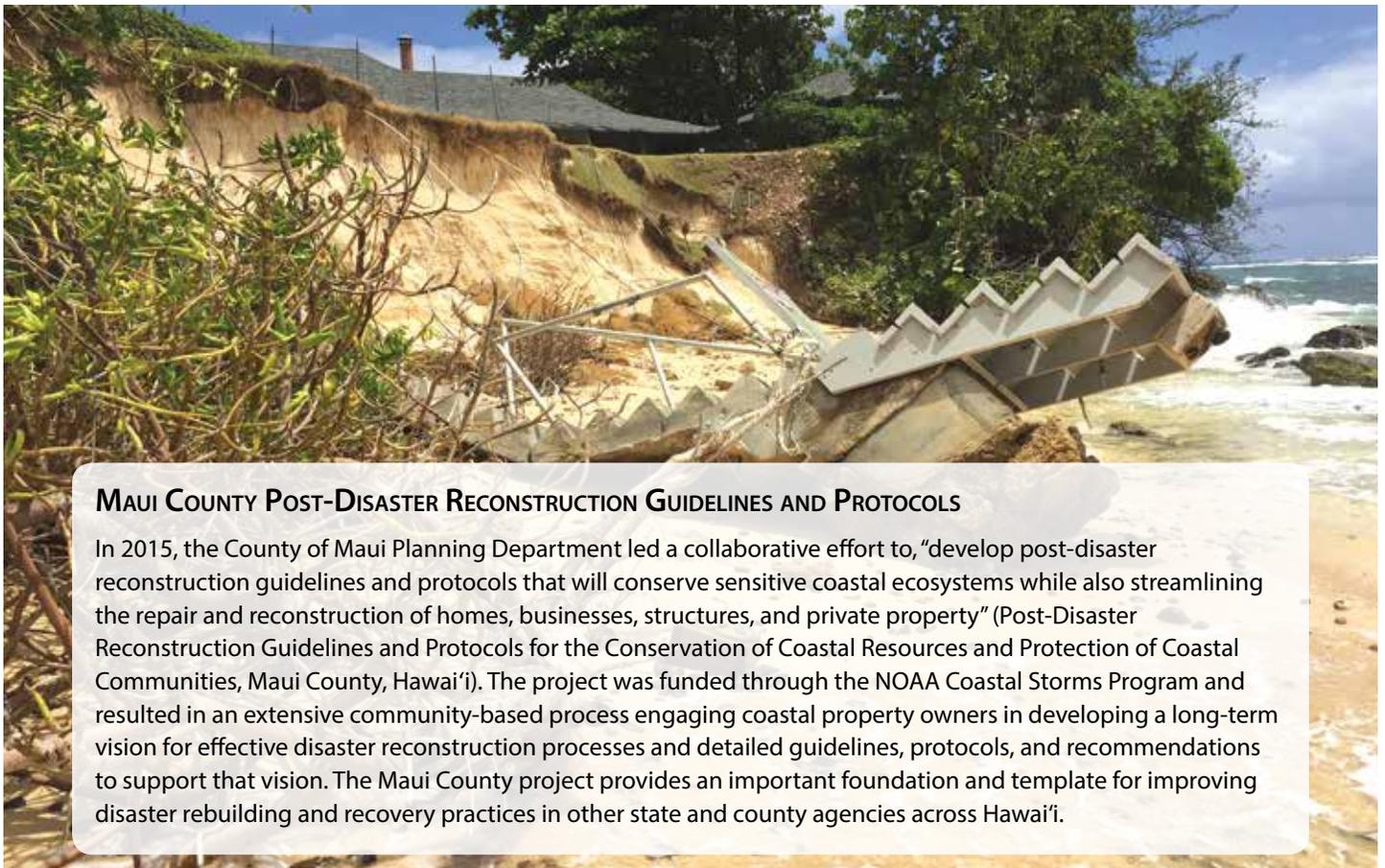
This project focuses on developing new guidelines to support resilience focused disaster rebuilding planning and practices in Hawai'i in collaboration with affected state and county agencies and technical experts. This statewide effort builds on previous work by Maui County and Hawai'i Sea Grant. Project activities will include:

- **Conducting workshops** with stakeholders from county and state government to understand needs and build local capacity for resilience focused disaster planning.
- **Establishing guidelines** for incorporating resilience focused rebuilding practices into state and county plans, policies, ordinances, and regulations.
- **Developing examples** of model policies, ordinances, and public communication tools that support streamlined and resilient reconstruction in the aftermath of a disaster.
- **Creating a framework** for Pre-Disaster Recovery Plans that can be applied at the state and local level.
- **Advising the Hawai'i Interagency Climate Adaptation Committee** on opportunities and recommendations for incorporating resilience concerns into disaster rebuilding practices.

These activities will support state and county government in balancing regulatory control (permitting) and recovery speed, protecting sensitive environmental and cultural resources, and increasing preparedness for future disasters.

## Project Outcomes

The goal of this project is to increase the capacity of coastal communities in Hawai'i to build back safer, stronger, smarter, and faster after a damaging disaster while conserving natural resources. The project will produce guidelines and support implementation of resilience focused rebuilding practices, policies and regulations at the state and county level.



### MAUI COUNTY POST-DISASTER RECONSTRUCTION GUIDELINES AND PROTOCOLS

In 2015, the County of Maui Planning Department led a collaborative effort to, “develop post-disaster reconstruction guidelines and protocols that will conserve sensitive coastal ecosystems while also streamlining the repair and reconstruction of homes, businesses, structures, and private property” (Post-Disaster Reconstruction Guidelines and Protocols for the Conservation of Coastal Resources and Protection of Coastal Communities, Maui County, Hawai'i). The project was funded through the NOAA Coastal Storms Program and resulted in an extensive community-based process engaging coastal property owners in developing a long-term vision for effective disaster reconstruction processes and detailed guidelines, protocols, and recommendations to support that vision. The Maui County project provides an important foundation and template for improving disaster rebuilding and recovery practices in other state and county agencies across Hawai'i.

## The Bigger Picture: Building Resilience to Coastal Hazards and Climate Change in Hawai'i

As an island community where much of the population and infrastructure is concentrated along low-lying shores, Hawai'i is uniquely vulnerable to sea level rise and coastal hazards. Scientists and policy makers are responding to these risks with a variety of innovative projects, plans, and technologies.

### **The Hawai'i Sea Level Rise Vulnerability and Adaptation Report**

In 2014, the Hawai'i State Legislature passed the Hawai'i Climate Adaptation Initiative Act (Act 83, Session Laws of Hawai'i) declaring that climate change poses both an urgent and long-term threat to the state's economy, sustainability, security, and way of life. This legislation created an Interagency Climate Adaptation Committee and called for the development of a statewide Sea Level Rise Vulnerability and Adaptation Report. This report, completed in December 2017, is helping Hawai'i prepare for the impacts of sea level rise and is also intended to serve as a model for future efforts to address other climate related threats and climate change adaptation priorities, ultimately leading to a Climate Adaptation Plan for the State of Hawai'i. In 2017, the State Legislature passed Act 32 further solidifying Hawai'i's commitment to climate change mitigation and adaptation and created a Hawai'i Climate Change Mitigation and Adaptation Commission to further the work of the Committee established in 2014. The Report is available at [climateadaptation.hawaii.gov](http://climateadaptation.hawaii.gov).

### **Hawai'i Sea Level Rise Viewer**

This online Viewer incorporates the best available science on sea level rise predictions for Hawai'i including exposure to erosion and coastal inundation. With high-resolution interactive maps, the Viewer serves as a companion digital atlas for the State Sea Level Rise Vulnerability and Adaptation Report. This tool is accessible to communities and decision-makers across Hawai'i, allowing them to visualize and plan for the local impacts of coastal hazards and sea level rise. The Viewer was developed by the Pacific Islands Ocean Observing System under the direction of Hawai'i Sea Grant and the State of Hawai'i with funding from the NOAA 2016 Regional Coastal Resilience Grant and the Hawai'i Department of Land and Natural Resources. The Viewer is available at [www.hawaiisealevelriseviewer.org](http://www.hawaiisealevelriseviewer.org)

### **Integrating Coastal Hazards and Sea Level Rise Resilience in Community Planning**

It can be challenging to translate state-wide policy into action at the local level. This project focuses on developing practical guidelines for incorporating recommendations from the Hawai'i Sea Level Rise Vulnerability and Adaptation Report and the Hawai'i Climate Adaptation Priority Guidelines into the community planning process. Ultimately, this project will build capacity in state and county government to address climate change, sea level rise, and coastal hazards through appropriate entry points in the comprehensive community planning process.

### **Assessing the Feasibility and Implications of Managed Retreat Strategies for Vulnerable Coastal Areas**

The Hawai'i State Office of Planning, Coastal Zone Management Program, as part of its implementation of the Ocean Resources Management Plan, is leading this project to facilitate discussion on the feasibility of managed retreat as a strategy for climate change adaptation in Hawai'i. Research on strategic retreat options and lessons learned from communities around the globe will be compiled into a background report. The project also explores the potential nexus and additional benefits of a managed retreat framework to provide and enhance public access to the shoreline and state land-use management policies. Stakeholder consultations, local case studies, and a statewide symposium will contribute to a final report on the feasibility of managed retreat in Hawai'i.



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For more information, please contact:

Katy Hintzen, University of Hawai'i Sea Grant College Program  
(808) 956-3349 • [hintzen@hawaii.edu](mailto:hintzen@hawaii.edu) • [hawaiiseagrant.org](http://hawaiiseagrant.org)