



UNIVERSITY OF HAWAII SYSTEM

‘ŌNAEHANA KULANUI O HAWAII

Legislative Testimony

Hō'ike Mana'o I Mua O Ka 'Aha'ōlelo

Testimony Presented Before the
House Committee on Finance
Monday, February 26, 2024 at 3:30 p.m.

By

Charles "Chip" Fletcher, PhD

Interim Dean

School of Ocean and Earth Science and Technology

And

Darren Lerner, PhD

Director, Sea Grant College Program

And

Michael Bruno, PhD

Provost

University of Hawai'i at Mānoa

HB 1545 HD1 – RELATING TO ADAPTATION PATHWAYS PLANNING

Chair Yamashita, Vice Chair Kitagawa, and members of the Committee:

The University of Hawai'i Sea Grant College Program (Hawai'i Sea Grant) and the Climate Resilience Collaborative (CRC) support House Bill 1545 HD1, which expands the authority of the State and counties to develop adaptation pathways plans to modify and relocate infrastructure away from critically threatened areas to locations outside sea level rise and coastal flooding exposure areas and appropriates funds.

Hawai'i Sea Grant and CRC support this measure and defer to the amendments from the Department of Land and Natural Resources.

Hawai'i Sea Grant's mission is to provide integrated research, extension, and education activities that increase understanding and use of ocean and coastal resources of the Hawaiian and Pacific Islands and support the informed personal, policy, and management decisions that are integral to realizing this vision. Hawai'i Sea Grant is part of a national network of 34 university-based programs associated with the National Oceanic and Atmospheric Administration that promote better understanding, conservation, and use of coastal resources.

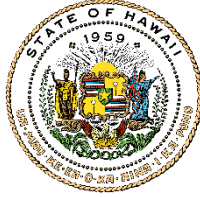
CRC is a multi-investigator research project at the University of Hawai'i at Mānoa focused on sea level rise adaptation and climate resilience. CRC is updating coastal models that project the impacts of sea level rise.

The research that goes into identifying Hawai'i's exposure to sea level rise is coming out of the University of Hawai'i School of Ocean and Earth Science and Technology. To maintain our understanding of sea level threats based on the latest science, these researchers need ongoing financial support from the State. CRC would be happy to provide updated sea level rise data and projections to the Committee or any lawmaker upon request.

CRC and Hawai'i Sea Grant support House Bill 1545 HD1, provided its adoption does not impact priorities as indicated in our Board of Regents Approved Budget. Thank you for the opportunity to testify on this measure.

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAII'
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA

P.O. BOX 621
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LAND
STATE PARKS

Testimony of
DAWN N. S. CHANG
Chairperson

Before the House Committee on
FINANCE

Monday, February 26, 2024

3:30 p.m.

State Capitol, Conference Room 308 & Videoconference

In consideration of
HOUSE BILL 1545, HOUSE DRAFT 1
RELATING TO ADAPTATION PATHWAYS PLANNING

House Bill 1545, House Draft (HD) 1 proposes to expand the authority of the State and counties to develop adaptation pathways plans to modify and relocate infrastructure away from critically threatened areas to locations outside sea level rise and coastal flooding exposure areas. **The Department of Land and Natural Resources (Department) strongly supports this bill.**

A 2012 study by University of Hawai'i researchers for the United States Geological Survey found that over 13 miles of public beaches have already been lost to beach erosion and construction of coastal armoring including seawalls and revetments. This bill enables the Department and county agencies to work with property owners at a regional scale to identify appropriate adaptation measures and triggers for action for each structure threatened by sea level rise.

Long-term observational data from local tide gauge stations show that sea level is rising around Hawai'i. Beach loss and threats to shorefront development will increase exponentially in coming decades with coastal erosion and flooding exacerbated by sea level rise if adaptation measures are not proactively implemented. As outlined in the 2022 5-Year Update to the Hawaii Sea Level Rise Vulnerability and Adaptation Report, peer-reviewed scientific literature as well as government and multinational reports increasingly point to three to four feet of sea level rise by 2100 as a mid-range scenario for Hawai'i.

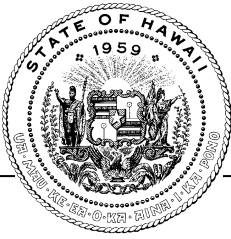
Current models indicate that Hawai‘i and other tropical Pacific sites will experience sea level rise that is 16% to 20% higher than the global average¹. These predictions make it imperative to act now.

Adapting to sea level rise and associated coastal hazards is a multi-faceted endeavor. State and county agencies currently use known tools, such as beach and dune restoration, temporary shoreline armoring, and flood mitigation such as elevating buildings to address threats on an ad hoc, parcel by parcel basis. House Bill 1545 HD1 will build on previous and ongoing efforts to conduct proactive planning to prepare for increasing coastal erosion and flooding with a location-specific suite of adaptation measures. Furthermore, House Bill HD1 1545 addresses the following priority action areas from the 2017 and 2022 Hawai‘i Sea Level Rise Vulnerability and Adaptation Reports:

- Facilitate interagency coordination for holistic adaptation planning (e.g., comprehensive consideration and planning for natural resources, roads, communities; and improved communications between government agencies);
- Conserve and adapt Native Hawaiian cultural resources and sites;
- Integrate equity and justice considerations to vulnerability assessments and adaptation planning and actions;
- Address and stop the loss of shoreline access;
- Integrate economic valuation and ecosystem co benefits of natural coastal resources into planning and actions;
- Make managed retreat a viable option and identify funding mechanisms for adaptation; and
- Implement phased adaptation to sea level rise.

Mahalo for the opportunity to provide testimony in support of this bill.

¹ Sweet, W.V., B.D. Hamlington, R.E. Kopp, C.P. Weaver, P.L. Barnard, D. Bekaert, W. Brooks, M.Craghan, G. Dusek, T. Frederikse, G. Garner, A.S. Genz, J.P. Krasting, E. Larour, D. Marcy, J.J. Marra, J. Obeysekera, M. Osler, M. Pendleton, D. Roman, L. Schmied, W. Veatch, K.D. White, and C. Zuzak, [2022: Global and Regional Sea Level Rise Scenarios for the United States: Updated Mean Projections and Extreme Water Level Probabilities Along U.S. Coastlines](#). NOAA Technical Report NOS 01. National Oceanic and Atmospheric Administration, National Ocean Service, Silver Spring, MD.



**STATE OF HAWAII
OFFICE OF PLANNING
& SUSTAINABLE DEVELOPMENT**

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

MARY ALICE EVANS
INTERIM DIRECTOR

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Statement of
MARY ALICE EVANS, Interim Director

before the
HOUSE COMMITTEE ON FINANCE
Monday, February 26, 2024, 3:00 PM
State Capitol, Conference Room 308

in consideration of
HB 1545 HD1
RELATING TO ADAPTATION PATHWAYS PLANNING.

Chair Yamashita, Vice Chair Kitagawa, and Members of the House Committee on Finance:

The purpose of HB 1545 HD1 is to appropriate funds to the Department of Land and Natural Resources (DLNR) to develop adaptation pathway plans to facilitate natural resource conservation and reduce the loss of public and private infrastructure to damage associated with sea level rise and flooding.

The Office of Planning and Sustainable Development **supports** this bill as it complements current OPSD efforts to address coastal hazards and adaptation planning. In accordance with HRS§225M-2(b)(9) and HRS§225M-9, the OPSD Coastal Zone Management Program (CZM) is engaging in activities to further understand and support adaptation efforts across the state.

- Regional Shoreline Management Study: Assess the feasibility of regional shoreline management by identifying shoreline regions and subregions for adaptation planning and management purposes.
- Managed Retreat Analysis: Analyze the existing challenges and opportunities to implementing managed retreat from the perspectives of policy and legal, and funding and financing. This analysis focuses on managed retreat strategies as they would apply to private properties.

The tasks outlined in HB 1545 HD1 would complement the OPSD CZM's work in developing and implementing coastal adaptation planning.

Thank you for the opportunity to testify on this measure.

Council Chair
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Vice-Chair
Yuki Lei K. Sugimura

Presiding Officer Pro Tempore
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Director of Council Services
David M. Raatz, Jr., Esq.

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Richelle K. Kawasaki, Esq.

COUNTY COUNCIL
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WAILUKU, MAUI, HAWAII 96793
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February 24, 2024

TO: The Honorable Kyle T. Yamashita, Chair, and
Members of the Committee on Finance

FROM: Alice L. Lee
Council Chair 

SUBJECT: **HEARING OF FEBRUARY 26, 2024; TESTIMONY IN SUPPORT OF
HB1545, HD1, RELATING TO ADAPTATION PATHWAYS PLANNING**

I support this measure to expand State and county authority to plan for relocating infrastructure outside of areas exposed to sea-level rise and coastal flooding.

I am providing this testimony in my capacity as an individual member of the Maui County Council.

I **support** this measure for the following reasons:

1. Sea-level rise requires prompt planning and action to address threats to public and private infrastructure along shorelines. State and county collaboration, with community input, is important.
2. The measure embodies an inclusive and mindful approach for various adaptation pathways, including incorporating triggers, implementing adaptation in phases, focusing on individual property-specific considerations, preserving natural resources, and including culturally informed and community-engaged planning.

Thank you for your consideration.

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HB-1545-HD-1

Submitted on: 2/24/2024 9:34:16 PM

Testimony for FIN on 2/26/2024 3:30:00 PM

Submitted By	Organization	Testifier Position	Testify
Ted Bohlen	Hawaii Reef and Ocean Coalition	Support	Written Testimony Only

Comments:

STRONG SUPPORT!

The warming climate is bringing to Hawaii in the not-too-distant future more severe storms that batter our coast, the death of healthy coral reefs that protect our shoreline, and inevitable sea level rise.

We need to plan now to develop adaptation pathways and pull back public infrastructure from the existing shoreline. This measure will help with that planning.

Please pass this bill!

Hawaii Reef and Ocean Coalition (by Ted Bohlen)



2/26/2024

Finance Committee
Hawai'i State Capitol
Honolulu, Hawai'i 96813

Dear Chair Yamashita and Members of the Finance Committee,

Position: Support HB1545 - North Shore beach management and climate adaptation plan

The Surfrider Foundation, Hawai'i region, is testifying in **strong support of HB1545**, relating to the creation of a North Shore beach management plan.

From 2021-2022, the Surfrider Foundation, O'ahu Chapter, SeaGrant, and SSFM International convened the North Shore Coastal Resilience Working Group (NSCRWG),¹ a group of stakeholders on the North Shore, to discuss the imminent threats of sea level rise and proposed solutions. Of our 6 recommendations, one specifically discussed the immediate need to develop an adaptation plan:

Recommendation #5. Develop a comprehensive climate change and sea level rise vulnerability assessment and adaptation strategy for the North Shore

Comprehensive adaptation plans are both warranted and immediately needed to ensure that we can proactively approach the impacts of climate change and sea level rise across Hawai'i. Santa Cruz, California faces similar shoreline adaptation challenges and has thus implemented "Adaptation Pathways" as a way to more holistically plan for shoreline changes.

Adaptation pathways is a planning approach that addresses the uncertainty and challenges of sea level rise and climate change decision-making (such as uncertainty in the regulatory, political, economic, environmental, and sociocultural conditions of the future). Adaptation pathways utilize "triggers" (like the high wash of the waves) for successive adaptation actions over time. Adaptation pathways may include intermediate actions taken as part of a phased approach to provide time for planning and implementation of endpoint actions, which may include relocation of public and private infrastructure away from the shoreline. Adaptation pathways are an inclusive, win-win planning program for our coastal communities across the state.

In Hawai'i, beaches are an integral part of our way of life. HB1545 supports plans that are integral to ensuring that we have beaches for the next generation. Surfrider Foundation spent over \$20,000 of our nonprofit funds to bring the North Shore Working Group to fruition. We now ask the state to do their share and support HB1545 and ensure that we are proactively planning for the long term changes that are going to affect our coastlines and communities.

The Surfrider Foundation is a national nonprofit organization dedicated to the protection and enjoyment of our ocean, waves, and beaches. Surfrider maintains a network of over 150 chapters and academic clubs nationwide, including 3 chapters in the Hawaiian Islands. The Surfrider Foundation focuses on many aspects of the environment such as coastal protection, plastic pollution, and water quality. Thank you for your consideration of this testimony in support of HB2248, submitted on the behalf of the Surfrider Foundation's 3 Chapters in Hawai'i and all of our members who live in the state and visit to enjoy the many coastal recreational opportunities offered by all of the islands' coastlines.

Sincerely,

Lauren Blickley
Hawai'i Regional Manager
Surfrider Foundation

¹ <https://hawaii.surfrider.org/northshoreworkinggroup/>

HB-1545-HD-1

Submitted on: 2/24/2024 9:37:06 AM

Testimony for FIN on 2/26/2024 3:30:00 PM

Submitted By	Organization	Testifier Position	Testify
Denise E Antolini	Individual	Support	Written Testimony Only

Comments:

HB1545 HD1 FIN Hearing, Feb. 26, 2024 3:30 pm

Aloha FIN Chair Yamashita, Vice Chair Kitagawa, and Members of the Committee,

I write in **STRONG SUPPORT** of HB1545 Adaptation Pathways.

The State desperately needs well-identified pathways forward for coastal erosion planning, and having OCCL take the lead in this effort - with agency, homeowner, academic, nonprofit, business, and community partners - would be a significant positive opportunity for all stakeholders.

Please pass HB1545!

Mahalo,

Denise Antolini

Pūpūkea, O‘ahu

Monday, February 26, 2024, 3:30 P.M.

State of Hawai‘i

House Committee on Finance
State Capitol, Conference Room 308

**JOINT TESTIMONY OF DUANE FISHER AND ERIC ROBINSON OFFERING
COMMENTS ON HOUSE BILL 1545, HD1
RELATING TO ADAPTATION PATHWAYS PLANNING**

Dear Chairs Yamashita, Vice Chair Kitagawa, and Committee Members:

Our firm is legal counsel for a variety of clients that own property throughout the State, including individuals, businesses, and resorts. We practice in the areas of business and real estate law, including land use, shoreline, and special management area issues. We **offer comments** on House Bill 1545, HD1.

Adaptation pathways provide an objective, threshold-based approach to planning and “can allow for greater flexibility while minimizing upfront investment costs that may be required to address higher magnitude, but less certain, sea level possibilities.”¹ While we generally support the bill, we believe that adaptation pathways planning more appropriately falls within the Office of Planning and Sustainable Development (“*OPSD*”)’s kuleana. OPSD’s purpose is to: “(1) provide central direction and cohesion in the allocation of resources and effectuation of state activities and programs, and (2) effectively address current or emerging issues and opportunities.” As the bill’s preamble even acknowledges, OPSD has spearheaded related studies. The amendments contemplated in the bill should be made to HRS chapters 225M (State Planning) and/or 226 (the Hawaii State Planning Act).

Adaptation pathways planning falls within OPSD’s statutorily mandated responsibilities. As an example, HRS § 225M-2 provides that OPSD “shall engage” in activities, including:

(6) Coastal and ocean policy management, and sea level rise adaptation coordination. Carrying out the lead agency responsibilities for the Hawaii coastal zone management program, as specified in chapter 205A. Also:

....

(D) Coordinating sea level rise adaptation with state agencies having operational responsibilities over state facilities to identify existing and planned

¹ NOAA, *Application Guide for the 2022 Sea Level Rise Technical Report*, 29 (2022) (<https://aambpublicoceanservice.blob.core.windows.net/oceanserviceprod/hazards/sealevelrise/noaa-nos-techrpt02-global-regional-SLR-scenarios-US-application-guide.pdf>).

facilities, including critical infrastructure, that are vulnerable to sea level rise, flooding impacts, and natural hazards; [and]

....

(9) Climate adaptation and sustainability planning and coordination. Conducting plans and studies and preparing reports as follows:

(A) *Develop, monitor, and evaluate strategic climate adaptation plans* and actionable policy recommendations for the State and counties addressing expected statewide climate change impacts identified under chapter 225P and sections 226-108 and 226-109; and

(B) *Provide planning and policy guidance and assistance to state and county agencies regarding climate change and sustainability*[.]

Amending HRS chapter 171, as the bill currently proposes, narrows planning to only the shoreline area. However, the impacts of sea level rise aren't experienced solely in shoreline areas. As an example, groundwater inundation is a key impact of sea level rise and can occur well inland of the shoreline. When paired with the broad grant of authority to "do all things necessary, useful, and convenient" (page 5, lines 8-11) to implement adaptation pathways plans, we run the risk of conducting land use regulation by fiat, instead of developing the adaptation pathways plan with thoughtful and inclusive planning that the bill endeavors to do. The implementation authority should be removed from the bill (or at minimum, be greatly circumscribed).

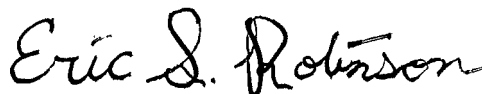
While sea level rise will occur over the next centuries to millennia, the timing and extent of sea level rise are not set in stone. This uncertainty underscores the benefits of an objective, threshold-based approach (like adaptation pathways planning) that considers all available tools for sea level rise adaptation. Given the bill's heavy emphasis on retreat, we highlight the State's 2019 Final Report *Assessing the Feasibility and Implications of Managed Retreat Strategies for Vulnerable Coastal Areas in Hawai'i*. That report recognized that not all areas of Hawaii's coastlines can be retreated and additional adaptation strategies (*e.g.*, accommodation, which includes elevating structures, and protection, which includes beach restoration) will be required to respond to sea level rise. These tools are a necessary component of an adaptation pathways plan. All options for adapting to sea level rise should be preserved—we need to keep all of the tools in the toolbox.

Mahalo for the opportunity to provide testimony offering comments on HB1545, HD1.

Very truly yours,



Duane R. Fisher



Eric S. Robinson

HB-1545-HD-1

Submitted on: 2/26/2024 11:49:55 AM

Testimony for FIN on 2/26/2024 3:30:00 PM

Submitted By	Organization	Testifier Position	Testify
Maureen Brock	Individual	Support	Written Testimony Only

Comments:

I am in favor of this bill.