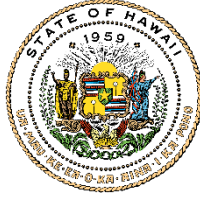


JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

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
HONOLULU, HAWAII 96809

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

RYAN K.P. KANAKA'OLE
FIRST DEPUTY

DEAN D. UYENO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE
MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES
ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Testimony of
DAWN N. S. CHANG
Chairperson

Before the Senate Committees on
WATER AND LAND
and
AGRICULTURE AND ENVIRONMENT

Wednesday, March 20, 2024

1:15 p.m.

State Capitol, Conference Room 229 & Videoconference

In consideration of
HOUSE BILL 1545, HOUSE DRAFT 2
RELATING TO ADAPTATION PATHWAYS PLANNING

House Bill 1545, House Draft 2 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) supports this measure provided that its passage does not replace or adversely impact priorities indicated in the FY 2025 Executive Supplemental Budget Request.**

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.

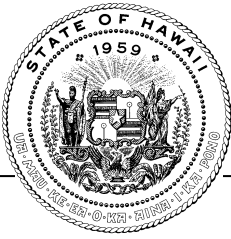
Current models indicate that Hawai‘i and other tropical Pacific sites will experience sea level rise that is 16% to 20% higher than the global average¹. These predictions make it imperative to act now.

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

235 South Beretania Street, 6th Floor, Honolulu, Hawaii'i 96813
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Statement of
MARY ALICE EVANS, Interim Director

before the
**SENATE COMMITTEES ON WATER AND LAND &
AGRICULTURE AND ENVIRONMENT**

Wednesday, March 20, 2024
1:15 PM
State Capitol, Conference Room 229

in consideration of
HB1545 HD2
RELATING TO ADAPTATION PATHWAYS PLANNING.

Chairs Inouye and Gabbard, Vice Chairs Elefante and Richards, and Members of the Senate Committees on Water and Land & Agriculture and Environment:

The purpose of HB1545 HD2 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 (OPSD) **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 HB1545 HD2 would complement the OPSD CZM's work in developing and implementing coastal adaptation planning.

Thank you for the opportunity to testify on this measure.



STATE OF HAWAII
HAWAII CLIMATE CHANGE MITIGATION & ADAPTATION
COMMISSION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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Director, DOH
Chairperson, DOE
Director, C+C DPP
Director, Maui DP
Director, Hawaii DP
Director, Kauai DP
The Adjutant General
Manager, CZM

Testimony of
Leah Laramee
Coordinator, Hawai'i Climate Change Mitigation and Adaptation Commission

Before the Senate Committees on
WATER AND LAND
and
AGRICULTURE AND ENVIRONMENT

Wednesday March 20, 2024
1:15 PM
State Capitol, Conference Room 229 & Videoconference

In consideration of
HOUSE BILL 1545 House Draft 2
RELATING TO ADAPTATION PATHWAYS PLANNING

House Bill 1545 HD2 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. **The Climate Change Mitigation and Adaptation Commission (Commission) supports this bill provided that its passage does not replace or adversely impact priorities indicated in the FY 2025 Executive Supplemental Budget Request.**

The Commission consists of a multi-jurisdictional effort between 20 different departments, committees, and counties. As sea level rise continues to accelerate, the State of Hawai'i must maintain a constant and ongoing effort to adopt policies and programs to support adaptation to a changing world. The State must maintain a diligent focus on continual and ongoing improvement of community engagement, laws, regulations, and policies to meet the challenge ahead and safeguarding our cultural and natural resources while also providing adaptation tools to the people of Hawai'i in an equitable manner.

This bill meets the priorities as outlined in the following recommendations and recommended actions from the 2022 update to the *Sea level Rise Vulnerability and Adaptation Plan*:

2017 Recommendation 1: Support sustainable and resilient land use and community development.

Recommended Action 1.8: Implement the recommendations of the February 2019 Office of Planning and Sustainable Development - Coastal Zone Management Program report titled “Assessing the Feasibility and Implications of Managed Retreat Strategies for Vulnerable Coastal Areas in Hawai`i”: The state should establish and fund programs at the state and county level to incentivize relocation (e.g., willing-seller managed retreat) to benefit community resilience and protect public trust resources.

2022 Recommended Action 1.9: Conduct long-term strategic planning for maintenance, repair and replacement of critical infrastructure within the SLR-XA in advance of emergent need: State agencies should undertake long-term strategic planning initiatives to reduce the use of emergency measures for maintenance and repair of facilities and infrastructure within the SLR-XA.

2017 Recommendation 2: Prioritize smart urban redevelopment outside the SLR-XA and limit exposure within the SLR-XA.

Updated 2017 Recommendation 4: Enable beaches to persist with sea level rise.

Updated 2017 Recommended Action 4.3: Explore legislative and policy mechanisms to designate funding for priority coastal lands and enable the use of a variety of practices and tools and utilize existing programs to acquire beaches and other coastal lands for recreational, cultural, ecosystem and resilience objectives.

2017 Recommendation 5: Preserve Native Hawaiian culture and communities with sea level rise.

2017 Recommended Action 5.3 Develop adaptation plans to preserve access to coastal lands and water within Native Hawaiian communities with sea level rise.

2017 Recommendation 6: Protect nearshore water quality from sea level rise impacts.

2017 Recommendation 9: Promote collaboration and accountability for adapting to sea level rise.

The development of adaptation pathways plans for vulnerable coastal infrastructure is a necessary step towards our collective preparedness for the impacts of sea level rise. The community engaged process outlined in this legislation will create a cooperative way forward for the State and county agencies to safeguard natural resources and support landowners in adapting to current and future hazards.

Mahalo for the opportunity to testify in support of this measure.



UNIVERSITY OF HAWAII SYSTEM

‘ŌNAEHANA KULANUI O HAWAII

Legislative Testimony

Hō'ike Mana'o I Mua O Ka 'Aha'ōlelo

Testimony Presented Before the
Senate Committee on Water and Land
Senate Committee on Agriculture and Environment
Wednesday, March 20, 2024 at 1:15 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 HD2 – RELATING TO ADAPTATION PATHWAYS PLANNING

Chairs Inouye and Gabbard, Vice Chairs Elefante and Richards, and members of the Committees:

The University of Hawai'i Sea Grant College Program (Hawai'i Sea Grant) and the Climate Resilience Collaborative (CRC) support House Bill 1545 HD2, 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 HD2, 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.

Council Chair
Alice L. Lee

Vice-Chair
Yuki Lei K. Sugimura

Presiding Officer Pro Tempore
Tasha Kama

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Tamara Paltin
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Nohelani U'u-Hodgins



Director of Council Services
David M. Raatz, Jr., Esq.

Deputy Director of Council Services
Richelle K. Kawasaki, Esq.

COUNTY COUNCIL
COUNTY OF MAUI
200 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793
www.MauiCounty.us

March 19, 2024

TO: The Honorable Lorraine R. Inouye, Chair, and
Members of the Committee on Water and Land

The Honorable Mike Gabbard, Chair, and
Members of the Committee on Agriculture and Environment

FROM: Alice L. Lee
Council Chair

A handwritten signature in cursive script, appearing to read "Alice L. Lee".

SUBJECT: **HEARING OF MARCH 20, 2024; TESTIMONY IN SUPPORT OF HB1545,
HD2, 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 property-specific considerations, preserving natural resources, and including culturally informed and community-engaged planning.

Thank you for your consideration.



3/19/2024

Senate Committees on Water and Land and Agriculture and Environment
Hawai'i State Capitol
Honolulu, Hawai'i 96813

Dear Chair Inouye, Chair Gabbard, and Members of the Senate Committees on Water and Land and Agriculture and Environment,

Position: Support HB1545 - Adaptation Pathways

The Surfrider Foundation, Hawai'i region, is testifying in **strong support of HB1545**, which would 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.

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.

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. These plans are not only needed for the North Shore of O'ahu (and HB1545 is *not* limited to the North Shore), but for additional "hotspot" areas throughout the islands where erosion is immediately impacting human structures/infrastructures

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. 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 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-2

Submitted on: 3/14/2024 4:18:29 PM

Testimony for WTL on 3/20/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
Jacqueline S. Ambrose	Individual	Support	Written Testimony Only

Comments:

Aloha,

Yes to expanding 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. Appropriates funds.

HB-1545-HD-2

Submitted on: 3/18/2024 8:25:15 AM

Testimony for WTL on 3/20/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
Jackie Keefe	Individual	Comments	Written Testimony Only

Comments:

Aloha Chairs Inouye and Gabbard, Vice Chairs Elefante and Richards, and Members of the Committees on Water & Land and Agriculture & the Environment,

My name is Jackie Keefe and I am a resident of Lahaina.

I am submitting comments only for HB1545 HD2 because while I believe that sea level rise adaptation is an important thing to address, I have little faith that the DLNR can handle the management of this. They are consistently unable to keep up with the duties that they already have, especially here on Maui (see: enforcing boating regulations at Mala Ramp).

I believe that you should be considering working with and funding local nonprofit organizations to do this work, as they are the ones on the ground and deeply involved with the science behind these issues. Nonprofit organizations are a growing area, especially here on Maui where our shorelines are eroding 43% faster than the rest of the islands. The people have their trust in these nonprofits, but they need resources. I do not believe that appropriating more resources to the DLNR would actually help accomplish what this bill intends.

Thank you for your consideration.

Jackie Keefe

Lahaina, Maui

HB-1545-HD-2

Submitted on: 3/18/2024 9:25:04 AM

Testimony for WTL on 3/20/2024 1:15:00 PM

Submitted By	Organization	Testifier Position	Testify
Glen Kagamida	Individual	Support	Written Testimony Only

Comments:

SUPPORT CLIMATE CHANGE PREPAREDNESS.

MAHALO!

Wednesday, March 20, 2024, 1:15 P.M.

State of Hawai'i

Senate Committees on Water and Land, and on Agriculture and Environment
State Capitol, Conference Room 229

**JOINT TESTIMONY OF DUANE FISHER AND ERIC ROBINSON OFFERING
COMMENTS ON HOUSE BILL 1545, HD2
RELATING TO ADAPTATION PATHWAYS PLANNING**

Dear Chairs Inouye and Gabbard, Vice Chairs Elefante and Richards, 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, HD2.

In brief, our comments are as follows:

1. Adaptation pathways planning falls within the Office of Planning and Sustainable Development (“OPSD”)’s kuleana;
2. The bill’s overemphasis on implementing adaptation pathways plans is to the detriment of the actual development of adaptation pathways plans; and
3. It’s unclear what the fiscal implications of the bill are, particularly in this year’s resource constrained environment.

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

(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* [.]

The bill rationalizes that the Department of Land and Natural Resources has a “vested interest” in adaptation pathways planning because affected lands will someday be public lands

(page 3, lines 8-19), and therefore, HRS chapter 171 should be amended.¹ However, HRS chapter 171 pertains to the management and disposition of public lands, *i.e.*, State lands that are currently public. HRS chapters 225M (State Planning) and/or 226 (the Hawaii State Planning Act) provide more suitable vehicles for adaptation pathways planning. This rationalization seems tenuous, considering OPSD's statutorily mandated responsibilities.² Furthermore, it's unclear to what extent and cost the bill would duplicate OPSD's staffing and efforts.

The bill would also grant the Department the authority to "do all things necessary, useful, and convenient" (page 5, lines 8-11) to *implement* adaptation pathways plans. It is unclear how the Department intends to implement adaptation pathways plans, particularly with respect to lands that fall outside of their jurisdiction (*e.g.*, private lands). While we understand that it may not be the Department's intent, by requiring the Department to conduct planning and granting the Department broad authority to implement their plan, we run the risk of conducting land use regulation by fiat. This would be to the detriment of developing adaptation pathways plan with thoughtful and inclusive planning, as the bill endeavors to do.

The implementation authority should be removed from the bill (or at minimum, be greatly circumscribed). To this end, we respectfully propose the following amendments for the Committees' consideration:

- **On page 5, line 11: delete "and implementation"**
- **On page 9, line 20 through page 10, line 2: delete subparagraph (f)**

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. Adaptation pathways planning "can allow for greater flexibility while minimizing upfront investment costs that may be required to address higher magnitude, but less certain, sea level possibilities."³ Adaptation pathways planning can be an important and worthwhile endeavor if resourced and conducted properly. However, it's unclear what resources (*e.g.*, how much funding) are needed to carry out the planning portion of adaptation pathways planning.

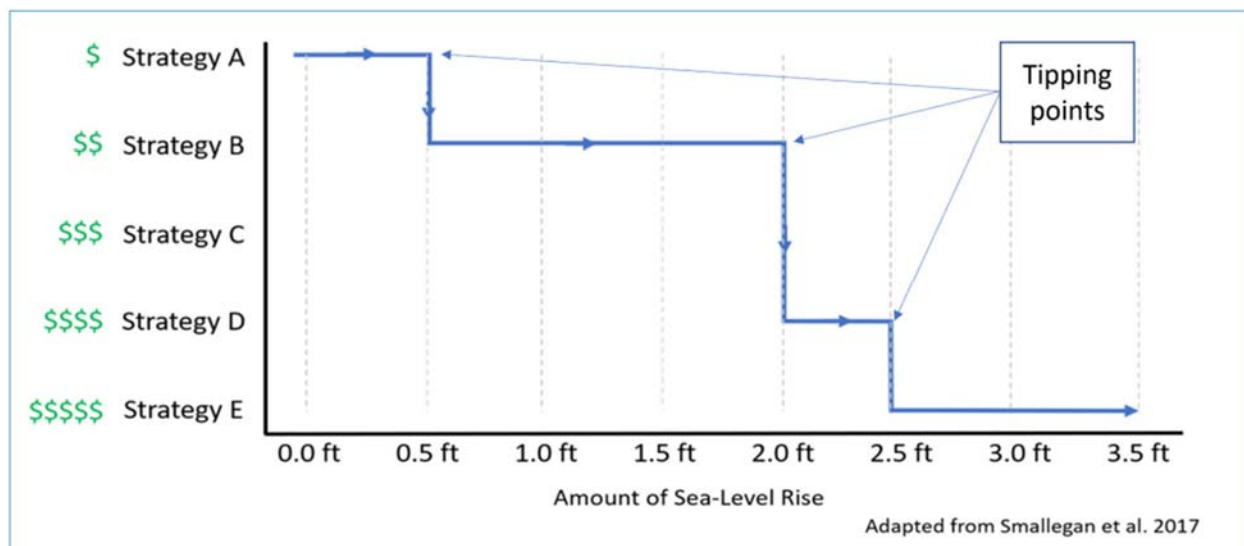
With respect to the implementation of adaptation strategies, NOAA has explained that "[t]he various pathways or sequences of actions are also often ordered such that more cost-effective or desired actions are implemented first, whereas more significant or expensive capital projects

¹ Focusing on current public lands does not account for the reality that the impacts of sea level rise are not 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.

² The bill's preamble acknowledges that OPSD has spearheaded related studies, which are consistent with OPSD's purpose 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."

³ 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>).

are deferred to allow time to prepare for more significant and expensive capital projects.”⁴ This is illustrated in the following NOAA graphic⁵ and underscores the need to separate the planning and implementation portions of adaptation pathways.



Adaptation pathways planning is also consistent with the State’s 2019 Final Report *Assessing the Feasibility and Implications of Managed Retreat Strategies for Vulnerable Coastal Areas in Hawai‘i*, which recognized that not all areas of Hawai‘i’s coastlines can be retreated, and additional adaptation strategies will be required to respond to sea level rise. Additional adaptation strategies, which include accommodation (*e.g.*, elevating structures) and protection (*e.g.*, beach restoration) are essential components of an adaptation pathways plan.

Mahalo for the opportunity to provide testimony offering comments on HB1545, HD2.

Very truly yours,

Duane R. Fisher

Eric S. Robinson

⁴ *Id.*

⁵ *Id.*

HB-1545-HD-2

Submitted on: 3/19/2024 9:16:25 PM

Testimony for WTL on 3/20/2024 1:15:00 PM



Submitted By	Organization	Testifier Position	Testify
Daniel Amato	Individual	Support	Written Testimony Only

Comments:

As a professional environmental scientist, I support HB1545. The impacts of sea level rise in Hawaii are currently being seen and faster than we anticipated. There are coastal roads being repeatedly damaged, houses falling into the sea, and damage to other critical infrastructure. All this causes unsafe conditions for both landowners and the public alike. We cannot wait any longer to initiate planning and preparation for an organized and managed retreat in vulnerable areas. Funding is required to support these efforts. The cost of not acting now increases the future damage and expense that reactive actions will require. Please support HB1545. Mahalo – Daniel Amato, PhD.