

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

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**SYLVIA LUKE**  
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Statement of  
**MARY ALICE EVANS, Interim Director**

before the  
**HOUSE COMMITTEES ON WATER AND LAND & ENERGY AND ENVIRONMENTAL  
PROTECTION**

Tuesday, February 6, 2024, 9:05 AM  
State Capitol, Conference Room 325

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

Chairs Ichiyama and Lowen, Vice Chairs Poepoe and Cochran, and Members of the House Committees on Water and Land & Energy and Environmental Protection:

The purpose of HB 1545 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 HB 1545 would complement the OPSD CZM's work in developing and implementing coastal adaptation planning.

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  
HONOLULU, HAWAII 96809

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

DEAN D. UYENO  
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
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ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Testimony of  
DAWN N. S. CHANG  
Chairperson

Before the House Committees on  
WATER AND LAND  
and  
ENERGY & ENVIRONMENTAL PROTECTION

Tuesday, February 6, 2024  
9:05 a.m.

State Capitol, Conference Room 325 & Videoconference

In consideration of  
HOUSE BILL 1545  
RELATING TO ADAPTATION PATHWAYS PLANNING

House Bill 1545 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 and offers the following comments.**

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 average<sup>1</sup>. 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 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 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.

The Department recommends amendments to this bill which would acknowledge the impacts of climate change on cultural resources, include restoration or remediation of the shoreline as a goal, and recognize that commercial and industrial properties are also at risk:

At Section 2, page 5, lines 3 to 7, of this bill:

“Adaptation pathways plan” means a plan outlining the adaptation pathways appropriate for a specific region, or individual parcel within a region, with environmental triggers or infrastructure damage triggers, for the implementation of individual measures identified within the adaptation pathways

At Section 2, page 5, lines 15 to 21, of this bill:

(b) The adaptation pathways may include measures such as elevation and reengineering of development to accommodate occasional flooding and the advancing shoreline, along with a land disposition to partially and temporarily occupy state land, other accommodation measures,

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<sup>1</sup> 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.

~~and~~ ultimate relocation from locations that are or will be critically threatened by impacts related to climate change and sea level rise, and restoration or remediation of the shoreline after removal of structures and materials.

At Section 2, page 6, lines 1-7, of this bill:

§171- Sea level rise adaptation pathways plan. (a) The department, in cooperation with appropriate state and county agencies, shall prepare and, from time to time, revise regional scale adaptation pathways plans for the implementation of a program to facilitate adaptation of vulnerable private residential, commercial, industrial, and resort development and associated public infrastructure to the impacts of sea level rise and associated flooding, and the restoration or remediation of the shoreline where necessary.

At Section 2, page 7, lines 3-13, of this bill:

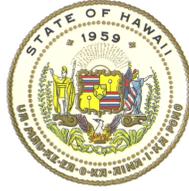
(c) Adaptation pathways plans developed pursuant to this part may incorporate proposed time-limited land dispositions in the adaptation pathways for a habitable structure that is proposed to be modified to withstand occasional flooding with sea level rise and temporarily occupy private land and state-owned land makai of the shoreline. These modifications shall:

- (1) Be shown to have a minimal impact on natural shoreline processes, coastal and cultural resources, and public shoreline safety and access; and
- (2) Include a proposed timeline and environmental triggers for the ultimate removal of development from the shoreline- and remediation or restoration of the land.

At Section 2 page 7, line 17, to page 8, line 2, of this bill:

- (1) Adaptation actions and ~~environmental~~ triggers for actions that are appropriate to the individual location, including but not limited to modification and relocation of private residential and resort development and associated public utilities and infrastructures;

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



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

**Co-Chairs:**  
Chair, DLNR  
Director, OPSD

**Commissioners:**  
Chair, Senate AEN  
Chair, Senate WTL  
Chair, House EEP  
Chair, House WAL  
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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 Laramée  
Coordinator, Hawai'i Climate Change Mitigation and Adaptation Commission**

**Before the House Committees on  
WATER & LAND  
AND  
ENERGY & ENVIRONMENTAL PROTECTION**

**Tuesday, February 6, 2024  
9:05 AM  
State Capitol, Conference Room 325 & Videoconference**

**In consideration of  
HOUSE BILL 1545  
RELATING TO ADAPTATION PATHWAYS PLANNING**

House Bill 1545 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.**

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  
House Committee on Water & Land  
House Committee on Energy & Environmental Protection  
Tuesday, February 6, 2024 at 9:05 a.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 – RELATING TO ADAPTATION PATHWAYS PLANNING

Chairs Ichiyama and Lowen, Vice Chairs Poepoe and Cochran, 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, 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.

Hawaii Sea Grant and CRC suggest a minor amendment to clarify this intent applies to critical infrastructure, not just habitable dwellings. HB 1545 proposes an amendment to §171-Sea level rise adaptation pathways plan, Hawaii Revised Statutes, to read (suggested amendments underlined).

Page 7 Line 3. "§171-Sea level rise adaptation pathways plan. (c) Adaptation pathways plans developed pursuant to this part may incorporate proposed time-limited land dispositions in the adaptation pathways for a habitable structure and critical infrastructure that is proposed to be modified to withstand occasional flooding with sea level rise and temporarily occupy private land and state owned land makai of the shoreline. These Modifications shall:"

Page 8 Line 6:

"(2) Coastal lands that are critically threatened by coastal erosion and sea level rise and have high natural and community resource value appropriate for adaptation and ultimate relocation of

structures **and critical infrastructure** with the overall purpose of natural resource restoration and conservation.”

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, provided its adoption does not replace or adversely impact priorities as indicated in our Board of Regents Approved Budget. Thank you for the opportunity to testify on this measure.



2/4/2024

WAL/EEP Committees  
Hawaii State Capitol  
Honolulu, Hawaii 96813

Dear Chair Ichiyama and Chair Lowen and Members of the House Committees on Water and Land and Energy and Environmental Protection,

**Position: Support HB1545**

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 4 chapters in the Hawaiian Islands. The Surfrider Foundation focuses on many aspects of the environment such as coastal protection, plastic pollution, and water quality.

The sandy beaches in Hawaii are facing severe chronic erosion that is being exacerbated by climate change and sea level rise. While it is evident that we need to move away from the coastline, Hawaii has few mechanisms in place to facilitate the relocation of infrastructure and structures that are in imminent danger from coastal erosion.

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.

We desperately need more tools in our toolbox to address and adapt to climate change and sea level rise, and shoreline planning through adaptation pathways is one of those important tools. Thank you for your consideration of this testimony in support of HB1545, submitted on the behalf of the Surfrider Foundation's 4 Chapters in Hawaii 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  
Hawaii Regional Manager  
Surfrider Foundation



Tuesday, February 6, 2024, 9:05 A.M.

State of Hawai'i

House Committees on Water and Land & Energy and Environmental Protection  
State Capitol, Conference Room 325

**TESTIMONY OF JERRY GIBSON OFFERING COMMENTS ON HOUSE BILL 1545  
RELATING TO ADAPTATION PATHWAYS PLANNING**

Dear Chairs Ichiyama and Lowen, Vice Chairs Poepoe and Cochran, and Committee Members:

My name is Jerry Gibson, I am President of the Hawaii Hotel Alliance (“HHA”) and have been a hotelier in Hawaii for more than 40 years. HHA membership includes most major hotel brands in Hawaii, including Hilton, Marriot, Hyatt, Aulani, Outrigger, Highgate Hotels, Springboard Hospitality, and many independent hotels. Our membership represents almost 30,000 hotel rooms of the approximately 44,000 hotel rooms in Hawaii. I submit this testimony offering comments on HB1545.

The bill provides an opportunity for the State to conduct regional-level, balanced, and objective planning for sea level rise. This would require consideration and coordination in areas well mauka of the beach and shoreline. For example, sending areas must be identified for critical infrastructure or other structures need to be relocated. Mechanisms and incentives to facilitate implementation, such as transfers of development rights and fiscal programs, also need to be developed. The State Office of Planning and Sustainable Development seems like the best-suited agency to carryout adaptation pathways planning. A long-range planning framework is already established in the HRS Ch. 226. The bill’s amendments would fit well within that framework.

It is essential that adaptation pathways plans are developed thoughtfully and inclusively. If developed and implemented without careful consideration, adaptation pathways plans could have a devastating effect on State and local economies. Thus, it is important to not focus solely on residential and resort development, but instead on the areas that will be impacted (including commercial and industrial uses). Sea level rise does not care what use properties are devoted to.

Finally, HHA voices its strong concern that the bill appears to grant the Department of Land and Natural Resources the unilateral authority to “do all things necessary, useful, and

convenient” to implement an adaptation pathways plan. This is antithetical to adaptation pathway planning and the language regarding implementation (on page 5) should be stricken.

Mahalo for the opportunity to provide testimony on HB1545.

Very truly yours,

A handwritten signature in black ink, appearing to read "Jerry Gibson". The signature is fluid and cursive, with a large, sweeping flourish at the end.

Jerry Gibson

**HB-1545**

Submitted on: 1/31/2024 7:13:41 PM

Testimony for WAL on 2/6/2024 9:05:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Justin Silva	Individual	Oppose	Written Testimony Only

Comments:

The combined total amount of general fund appropriations contained in only these two Acts will cause the state general fund expenditure ceiling for fiscal year 2024—2025 to be exceeded

**HB-1545**

Submitted on: 2/4/2024 3:56:33 PM

Testimony for WAL on 2/6/2024 9:05:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Testify</b>
Tamara Paltin	Individual	Support	Written Testimony Only

Comments:

I support HB1545 with the amendment that armoring to prevent loss of public infrastructure be time limited and require a planning and funding of managed retreat in the specific area because shoreline armoring has been shown to cause flanking erosion and make matters worse. In general I am supportive of adaptation pathways as we need to support further coastal resiliency but unlimited shoreline armoring, even for public infrastructure is not helping the situation, if it is needed in times of emergency until an alternative can be created that is understandable but there needs to be a time limit and plan for the future because sea level rise will continue indefinitely.

Mahalo,

Tamara Paltin

Council Chair  
Alice L. Lee

Vice-Chair  
Yuki Lei K. Sugimura

Presiding Officer Pro Tempore  
Tasha Kama

Councilmembers  
Tom Cook  
Gabe Johnson  
Tamara Paltin  
Keani N.W. Rawlins-Fernandez  
Shane M. Sinenci  
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  
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[www.MauiCounty.us](http://www.MauiCounty.us)

February 4, 2024

TO: The Honorable Representative Linda Ichiyama, Chair, and  
Members of the Committee on Water & Land  
The Honorable Representative Nicole E. Lowen, Chair, and  
Members of the Committee on Energy & Environmental Protection

FROM: Alice L. Lee  
Council Chair

A handwritten signature in cursive script, appearing to read "Alice L. Lee", is written over the printed name and title.

SUBJECT: **HEARING OF FEBRUARY 6, 2024; TESTIMONY IN SUPPORT OF  
HB 1545, 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.

Tuesday, February 6, 2024, 9:05 A.M.

State of Hawai'i

Senate Committees on Water and Land & Agriculture and Environment  
State Capitol, Conference Room 325

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

Dear Chair Ichiyama, Vice Chair Poepoe, 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.

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.”<sup>1</sup> 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 chapter 226 (the Hawaii State Planning Act) and OPSD should lead adaptation pathways planning.

Amending HRS 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. Similarly, the focus on “residential and resort development and associated public utilities and infrastructure” (page 5, lines 12-13) is overly narrow. The impacts of sea level rise are agnostic to use. Commercial, industrial, and other uses and development will also be impacted. 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

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<sup>1</sup> 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>).

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.

Very truly yours,



Duane R. Fisher



Eric S. Robinson