

DAVID Y. IGE  
GOVERNOR OF HAWAII



**LATE**

**SUZANNE D. CASE**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

**ROBERT K. MASUDA**  
FIRST DEPUTY

**M. KALEO MANUEL**  
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

**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES**

POST OFFICE BOX 621  
HONOLULU, HAWAII 96809

**Testimony of  
SUZANNE D. CASE  
Chairperson**

**Before the Senate Committee on  
WAYS AND MEANS**

**Friday, April 5, 2019  
10:15am  
State Capitol, Conference Room 211**

**In consideration of  
HOUSE BILL 1487, HOUSE DRAFT 1, SENATE DRAFT 1  
RELATING TO CLIMATE CHANGE**

House Bill 1487, House Draft 1, Senate Draft 1 proposes to establish the Honolulu Shoreline Climate Protection Pilot Project to develop a plan to protect urban Honolulu from the acute impacts of sea level rise, floodwater, storms, and other impacts of a rapidly changing climate. **The Department of Land and Natural Resources strongly supports this measure provided that its passage does not replace or adversely impact any pending Executive Budget requests.**

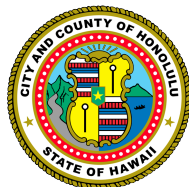
Thank you for the opportunity to comment on this measure.

OFFICE OF CLIMATE CHANGE, SUSTAINABILITY AND RESILIENCY  
**CITY AND COUNTY OF HONOLULU**

650 SOUTH KING STREET, 9<sup>TH</sup> FLOOR • HONOLULU, HAWAII 96813  
PHONE: (808) 768-2277 • EMAIL: [resilientoahu@honolulu.gov](mailto:resilientoahu@honolulu.gov) • INTERNET: [www.resilientoahu.org](http://www.resilientoahu.org)

**LATE**

KIRK CALDWELL  
MAYOR



JOSHUA W. STANBRO  
EXECUTIVE DIRECTOR &  
CHIEF RESILIENCE OFFICER

APRIL 5, 2019 10:15AM

STATE OF HAWAII  
COMMITTEE ON WAYS & MEANS

**TESTIMONY ON HOUSE BILL 1487 HD1 SD1  
A BILL RELATING TO CLIMATE CHANGE**

BY,

JOSHUA STANBRO  
EXECUTIVE DIRECTOR AND CHIEF RESILIENCE OFFICER  
OFFICE OF CLIMATE CHANGE, SUSTAINABILITY AND RESILIENCY

Dear Chair Dela Cruz, Vice Chair Keith-Agaran and Committee Members:

The City and County of Honolulu (City) Office of Climate Change, Sustainability and Resiliency (Resilience Office) **supports the intent** of House Bill 1487 HD1 SD1, which establishes the Honolulu shoreline climate protection pilot project to develop a plan to protect urban Honolulu from the acute impacts of sea level rise, floodwater, storms, and other impacts of a rapidly changing climate.

Thank you for your attention to this area, which encompasses much of the state's economy and population, the Kaka'ako Community Development District, the Capital District, and critical State transportation assets (e.g., Honolulu Harbor and Daniel K. Inouye International Airport). This area also includes important City recreational resources, critical infrastructure, and Transit-Oriented Development planning areas.

Although it is not possible to commit City matching funds outside of the regular budget process and timeline, we understand the unique challenges that the City and State jointly face in this geographic area from climate change and will explore the potential to allocate resources to this effort in the future should matching funds become available.

Thank you for the opportunity to testify.



49 South Hotel Street, Room 314 | Honolulu, HI 96813  
www.lwv-hawaii.com | 808.531.7448 | voters@lwv-hawaii.com

**COMMITTEE ON WAYS AND MEANS**  
Senator Donovan Dela Cruz, Chair  
Senator Gilbert S.C. Keith-Agaran, Vice Chair

Friday, April 5, 2019, 10:15 a.m., Conference Room 211

**HB1487 HD1 SD1 - RELATING TO CLIMATE CHANGE**

**TESTIMONY**

Nancy Davlantes, Legislative Committee Member, League of Women Voters of Hawaii

Chair Dela Cruz, Vice-Chair Keith-Agaran, committee members:

**The League of Women Voters of Hawaii** adds to its earlier support of the initial draft of this bill, as the current version now appropriates the sum of \$2,000,000 to establish the Honolulu shoreline climate protection pilot project in order to develop a plan to protect urban Honolulu from the acute impacts of sea level rise, floodwater, storms, and other impacts of a rapidly changing climate. It also instructs the Hawaii's Climate Change Mitigation and Adaptation Commission to partner with the City and County of Honolulu in development of the design.

As outlined by the Commission, Hawaii's future prospects are frightening: global sea levels could rise more than three feet by 2100, with more recent projections showing this occurring as early as 2060; over the next 30 to 70 years, approximately 6,500 structures and 19,800 people statewide will be exposed to chronic flooding.

Additionally, an estimated \$19 billion in economic loss would result from chronic flooding of land and structures located in exposure areas, and approximately 38 miles of coastal roads and 550 cultural sites would be chronically flooded, on top of the 13 miles of beaches that have already been lost on Kaua'i, O'ahu, and Maui to erosion fronting shoreline armoring, like seawalls.

This latest version of the bill is a sound improvement and gives it some teeth to tackle the challenges we face. It may be one pilot project, but we need to take the first step. Delay is not an option.

Thank you for the opportunity to submit testimony.



# UNIVERSITY OF HAWAII SYSTEM

## Legislative Testimony

---

Testimony Presented Before the  
Senate Committee Ways and Means  
Friday, April 5, 2019 at 10:15 a.m.

By

Charles (Chip) Fletcher  
Professor and Associate Dean  
School of Ocean and Earth Science and Technology  
Vice-Chair, Honolulu Climate Change Commission

And

Makena Coffman  
Professor, Urban and Regional Planning  
Director, Institute for Sustainability and Resilience  
Chair, Honolulu Climate Change Commission

And

Michael Bruno, PhD  
Provost, University of Hawai'i at Mānoa

HB 1487 HD1 SD1 – RELATING TO CLIMATE CHANGE

Chair Dela Cruz, Vice Chair Keith-Agaran and members of the committee:

The University of Hawai'i strongly supports HB 1487 HD1 SD1. This measure establishes a Honolulu shoreline climate protection pilot project to develop a plan to protect urban Honolulu from the impacts of climate change and be used as a model for the entire State. In addition, this measure provides funding to start the planning process for deciding how the urban corridor will respond to climate change, and, more specifically, sea level rise, as we move into a future characterized by the strongly accelerating impacts of global warming.

We believe this is an important step to increasing the resilience of our communities. We need to move forward on the planning process immediately, as community input and eventual implementation will take time to do well and avoid maladaptation. We also strongly urge the state to approach this pilot project with a holistic and collaborative approach that integrates relevant federal and county partners.

Thank you for the opportunity to testify.



April 3, 2019

In Support of HB1487 HD1 SD1 Relating to Climate Change  
Senate Committee on Ways And Means (WAM)  
April 5, 2019, 10:15am, Room 211

Aloha, Chair Dela Cruz, Vice Chair Keith-Agaran and Members of the Committee:

The Surfrider Foundation's Hawaii Chapters strongly support HB1487 HD1 SD2 to establish the Honolulu Shoreline Climate Projection Pilot Program to help deal with the consequences of climate change, sea level rise and increasing storms and hurricanes. Volunteer leaders from Surfrider's five Hawaii Chapters have played an active role in educating the public about the effects of climate change and sea level rise, and we are working with scientists from the UH Sea Grant Program and environmental groups like Sierra Club and Maui Tomorrow to help mitigate the effects and come up with practical solutions.

As you all know, sea levels are rising, and we have to prepare for the probability of increasingly severe storms, hurricanes and flooding. If Honolulu were to be hit by a major hurricane, the damage has been estimated to be in the billions of dollars. After New York was hit by Superstorm Sandy in 2012, the City began preparing a shoreline protection pilot program, and this bill would create a similar plan.

The Hawaii Climate Change Mitigation and Adaption Commission will develop a report and come up with designs to create a shoreline buffer zone to protect from flooding and sea level rise. As part of the bill, they should also go beyond just producing reports and begin implementing infrastructure measures to see how effective they are. Some of these measures should include moving the electrical equipment in shoreline hotel and structures from basements to higher levels (to protect them from flooding, electrical fires and blackouts) and designing a "Lei of Green Parks" along the shoreline (to mitigate flooding).

As an amendment, I would that this bill included provisions to prohibit homeowners from building seawalls and other shoreline hardening structures because that will only cause our rapidly eroding shorelines to recede even more. Like HB1564, this bill should allow for the temporary, non-hardened protection of highways and other public infrastructures, yet it should also require that they be moved inland as soon as possible. Maui's Pre-Disaster Mitigation and Management Plan should be a good guide for this bill to make sure there are solid plans in place before a natural disaster occurs.

I would also suggest that the bill create a revolving fund to help homeowners move back from the ocean, or at least elevate their houses onto posts, and include measure to preserve our beaches by allowing them to move inland as they erode. Our beaches are the best defense against climate change, sea level rise and the increasing threat from major storms and hurricanes.

Mahalo for your consideration of this bill and leadership in helping Honolulu to prepare for the effects of climate change and sea level rise.

Aloha,

Stuart Coleman

Stuart H. Coleman, Hawaii Manager

Testimony of The Nature Conservancy of Hawai'i  
Supporting HB 1487 HD1 SD1 Relating to Climate Protection  
Senate Committee on Ways and Means  
Friday, April 5, 2019, 10:15AM, Room 211

---

*The Nature Conservancy of Hawai'i is a non-profit conservation organization dedicated to the preservation of the lands and waters upon which all life depends. The Conservancy has helped protect more than 200,000 acres of natural lands in Hawai'i and Palmyra Atoll. We manage 40,000 acres in 13 preserves and work in over 30 coastal communities to help protect the near-shore reefs, waters and fisheries of the main Hawaiian Islands. We forge partnership with government, private parties and communities to protect forests and coral reefs for their ecological values and the many benefits they provide to people.*

---

The Nature Conservancy supports HB 1487 HD1 SD1 to establish a Honolulu shoreline climate protection pilot project.

We especially appreciate that this bill recognizes the potential for natural or green infrastructure to help mitigate impacts from climate change as we face increasing exposure to storms, flooding and sea level rise. Our island have environmental resources such as forests, wetlands, coral reefs, and other natural infrastructure that – if healthy, well-managed, and functioning – can help reduce emissions as well as mitigate the risks and related loss and damage from climate change.

For example, a team from The Nature Conservancy, University of California at Santa Cruz, Stanford University, and the US Geological Survey has developed biophysical models showing that coral reefs can provide an effective first line of defense for coastal flood reduction. These scientists have demonstrated that **healthy reefs can absorb up to 97% of wave energy**, protecting coastal properties from the power of the sea. Conversely, the loss of just one meter of reef could result in a doubling of the cost of damage.<sup>1</sup> And, two recent studies by the Conservancy and partners found that **natural climate solutions (i.e., conservation, restoration, and improved land management on natural and agricultural lands) can provide carbon storage and avoid greenhouse gas emissions equivalent to 21% of current U.S. annual emissions and 37% of cost-effective mitigation needed through 2030 toward holding global warming below 2°C.**<sup>2, 3</sup>

As such, it is important to invest in nature-based infrastructure to protect built infrastructure and property.

Thank you for your support of this measure.

---

<sup>1</sup> Ferrario, Filippo, Michael W. Beck, et al. "The effectiveness of coral reefs for coastal hazard risk reduction and adaptation." *Nature Communications* volume5, Article number: 3794 (2014). [www.nature.com/articles/ncomms4794](http://www.nature.com/articles/ncomms4794)

<sup>2</sup> Fargione, Joseph E., Steven Basset, et al. "Natural Climate Solutions for the United States.", *Science Advances* 2018, **4**: eaat1869, November 14, 2018. <http://advances.sciencemag.org/content/4/11/eaat1869>

<sup>3</sup> Griscom, Bronson W., Justin Adams, et al. "Natural Climate Solutions." *Proceedings of the National Academy of Sciences*. October 31, 2017 114 (44) 11645-11650. [www.pnas.org/content/114/44/11645](http://www.pnas.org/content/114/44/11645)

**HB-1487-SD-1**

Submitted on: 4/3/2019 12:20:44 PM

Testimony for WAM on 4/5/2019 10:15:00 AM

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Javier Mendez-Alvarez	Individual	Support	No

Comments:

**LATE**

**HAWAII OPERATING ENGINEERS  
INDUSTRY STABILIZATION FUND**



Affiliated AFL-CIO  
OPEIU - 3 - AFL-CIO (3)

*Uniting our strengths and working together  
for a better tomorrow.*

Senate Committee on Ways and Means  
Honorable Donovan M. Dela Cruz, Chair  
Honorable Gilbert S.C. Keith-Agaran, Vice Chair  
Honorable Members of the Senate Committee on Ways and Means

February 13, 2019

**RE: SUPPORT OF H.B. 1487 HD1 SD1- ESTABLISHES THE HONOLULU SHORELINE CLIMATE PROTECTION PILOT PROJECT**

Dear Chair Dela Cruz, Vice Chair Keith-Agaran, and Members of the Committee,

My name is Pane Meatoga III and I am the Community Liaison representing the Hawaii Operating Engineers Industry Stabilization Fund (HOEISF). We are a labor management fund representing 4000 unionized members in the heavy engineering site work and 500 general contractors specializing in heavy site and vertical construction.

Hawaii Operating Engineers Industry Stabilization Fund **supports HB 1487 HD1 SD1**. The construction industry understands that climate change is real and preparing for its impact on our islands is key to ensuring the livelihood and prosperity of our posterity here in the islands. The purpose of this act is to establish a Honolulu shoreline climate protection pilot project to develop a plan to protect urban Honolulu from the impact of climate change.

The coastline of urban Honolulu will be a particularly important and challenging area to protect in the face of rising seas and more frequent flooding and inland inundation. This bill will initiate and fund a pilot project to create a shoreline buffer from the Honolulu International Airport to the Diamond Head State Monument. This is the first step in a very lengthy process that will encompass years of research and planning. HB 1487HD1 SD1 is that single step.

If you plan it, we can build it!

Sincerely,

Pane Meatoga III  
Community Liaison  
Hawaii Operating Engineers Industry Stabilization Fund





**LATE**

April 5, 2019

Senator Donovan M. Dela Cruz, Chair  
Senator Gilbert S.C. Keith-Agaran, Vice Chair  
Senate Committee on Ways and Means

**Comments in Strong Support of HB 1487, HD1, SD1 Relating to Climate Change (Establishes the Honolulu shoreline climate protection pilot project to develop a plan to protect urban Honolulu from the impacts of sea level rise, floodwater, storms, and other impacts of a rapidly changing climate. Repeals on 6/30/2022. Appropriates funds.)**

**WAM D/M: Friday, April 5, 2019 at 10:15 a.m. in Conf. Rm. 211**

The Land Use Research Foundation of Hawaii (LURF) is a private, non-profit research and trade association whose members include major Hawaii landowners, developers, resort operators and utility companies. LURF's mission is to advocate for reasonable, rational and equitable land use planning, legislation and regulations that encourage well-planned economic growth and development, while safeguarding Hawaii's significant natural and cultural resources, and public health and safety.

**LURF strongly supports HB 1487, HD1, SD1, however, we respectfully submit the following amendment:**

SECTION 2. (c) The Hawaii climate change mitigation and adaptation commission shall partner with the city and county of Honolulu office of climate change, sustainability and resiliency, **and the affected communities and major land owners** in development of the design.

**HB 1487, HD1, SD1.** This measure establishes the Honolulu shoreline climate protection pilot project to develop a plan to protect urban Honolulu from the impacts of sea level rise, floodwater, storms, and other impacts of a rapidly changing climate; repeals as of June 30, 2022; and appropriates funds. The purpose of this bill is to establish a Honolulu shoreline climate protection pilot project to develop a plan to protect urban Honolulu from the impacts of climate change and be used as a model for the entire State.

LURF is in **strong support of HB 1487, HD1, SD1**, and respectfully urges your **favorable consideration of LURF's proposed amendments.**

Thank you for the opportunity to provide comments relating to this measure.



**LATE**

## HAWAII REGIONAL COUNCIL OF CARPENTERS

Senate Committee on Ways and Means  
The Honorable Donovan Dela Cruz, Chair  
The Honorable Gilbert S.C. Keith-Agaran, Vice Chair

Friday, April 5, 2019  
10:15 AM, State Capitol Room 211  
HB1487 HD1 SD1 – Relating to Climate Change

### Statement of the Hawaii Regional Council of Carpenters – Support for HB1487 HD1 SD1

Aloha Chair Dela Cruz, Vice Chair Keith-Agaran, and Members of the Committee:

The Hawaii Regional Council of Carpenters supports HB1487 HD1 SD1, which would establish the Honolulu shoreline climate protection pilot project to develop a plan to protect urban Honolulu from the acute impacts of sea level rise, floodwater, storms, and other impacts of a rapidly changing climate.

We are concerned about the potential for climate change to disrupt our island environment and affect the lives of everyone who calls Hawaii home. Not only do our union members enjoy Hawaii's unique natural environment, but our industry is particularly sensitive to future impacts of climate change. For example, rising water tables, subsiding land, and coastal erosion may require different designs for buildings and more advanced engineering techniques to be employed. Wetter winters may impact construction schedules, while hotter, drier summer days may also have an impact on worker health. There are many more possible impacts that we as a community must prepare for.

HB1487 HD1 SD1 calls upon the Hawaii Climate Change Mitigation and Adaption Commission to plan a system of coastal protection for the low-lying topography of urban Honolulu, akin to the plans currently being developed in New York City after Hurricane Sandy. In New York City, these plans were developed with the support of area residents, community groups, business interests, and labor organizations. We trust that if such coastal protection plans are developed for Honolulu, the Climate Change Mitigation and Adaption Commission will take a similarly inclusive and comprehensive approach.

Mahalo for the opportunity to provide these comments.

### STATE HEADQUARTERS & BUSINESS OFFICES

**OAHU:** 1311 Houghtailing Street, Honolulu Hawaii 96817-2712 • Ph. (808) 847-5761 Fax (808) 440-9188  
**HILO OFFICE:** 525 Kilauea Avenue, Room 205, Hilo, Hawaii 96720-3050 • Ph. (808) 935-8575 Fax (808) 935-8576  
**KONA OFFICE:** 75-126 Lunapule Road, Kailua-Kona, Hawaii 96740-2106 • Ph. (808) 329-7355 Fax (808) 326-9376  
**MAUI OFFICE:** 330 Hookahi Street, Wailuku, Maui 96793-1449 • Ph. (808) 242-6891 Fax (808) 242-5961  
**KAUAI OFFICE:** Kuhio Medical Ctr Bldg., 3-3295 Kuhio Hwy, Suite 201, Lihue, Kauai 96766-1040 • Ph. (808) 245-8511 Fax (808) 245-8911

**LATE**

Testimony of  
Christopher Delaunay, Government Relations Manager  
Pacific Resource Partnership

Senate Committee on Ways And Means  
The Honorable Donovan M. Dela Cruz, Chair  
The Honorable Gilbert S.C. Keith-Agaran, Vice Chair

HB 1487, HD1 Relating to Climate Change

Friday, April 5, 2019  
10:15 A.M.  
State Capitol – Room 211

Aloha Chair Dela Cruz, Vice Chair Keith-Agaran, and Members of the Committee:

Pacific Resource Partnership (PRP) **supports** HB 1487, HD1, SD1 which establishes the Honolulu shoreline climate protection pilot project to develop a plan to protect urban Honolulu from the impacts of sea level rise, floodwater, storms, and other impacts of a rapidly changing climate.

Scientists have been warning us for years that climate change will significantly impact our environment and overall well-being, especially if we are not proactive in reducing greenhouse gas emissions and adapting to the impacts of sea-level rise. The Fourth National Climate Assessment, completed in November 2018, acknowledges that 3.2 feet of global sea-level rise is possible as early as 2060 in a worst-case scenario. According to the Assessment the value of all structures and land projected to be flooded by 3.2 feet of sea-level rise amounts to more than \$19 billion statewide. As such, it is prudent and urgent to begin planning for the potential impacts that these changes will bring to Hawaii.

Therefore, we respectfully ask for your favorable passage of HB 1487, HD1, SD1. Thank you for this opportunity to testify.

