



NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY

An Authority of the State of Hawaii attached to the Department of Business, Economic Development & Tourism



Written Statement of
Gregory P. Barbour
Executive Director
Natural Energy Laboratory of Hawaii Authority
before the

HOUSE COMMITTEE ON WATER & LAND

Thursday, February 11, 2021
8:30 am
State Capitol, Conference Room 430

in consideration of
H.B. 1280
RELATING TO THE NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY.

The Natural Energy Laboratory of Hawaii Authority (NELHA) is pleased to comment on H.B. 1280 which transfers operational authority over the Makai Research Pier on Oahu to NELHA and appropriates \$5 million in general obligation bonds for the repair and upgrade of the pier.

NELHA has been in discussions with several agencies and private companies regarding taking over operations of the Makai Pier in Waimanalo, Oahu. NELHA's due diligence so far has consisted of a review of documentation provided, a site visit last month, reaching out to other similar research pier operations on the US mainland, researchers, R&D and commercial companies, as well as potential partners to gauge interest in possible future pier activities, and reaching out to Oceanic Institute which is a part of Hawaii Pacific University (HPU). HPU leases

over 100 acres on the mauka side of Kalanianaʻole Highway on which Oceanic Institute and Sea Life Park are located.

A detailed inspection of the pier in 2019 determined that the pier needs considerable repairs and maintenance if it is to continue to be operational. Approximately \$500,000 in needed in the immediate future to repair advanced deterioration in three areas. The preliminary rough estimate for the full repair amount is in the \$5,000,000 range. We are concerned that actual costs could be significantly higher and jeopardize our current priorities.

The assets include the pier itself which is invaluable and most likely irreplaceable as a research platform, the office space and warehouse building on the pier and a restricted zone offshore of the pier which is approximately 4 square miles. This zone could be similar to our six square mile ocean research corridor offshore of our operations in Kailua-Kona which we are currently in the process of expanding. Both ocean research corridors could be potentially significant assets and will need comprehensive environmental impact statements to master permit and facilitate research and demonstration projects. We believe that potentially developing a strategic partnership with the 100-acre HPU facility on the mauka side of Kalanianaʻole Highway offers considerable upside for office space and additional research facilities.

It is important to note as a self-sufficient State agency our financial model is currently structured, as stated in Section 227D-2 HRS, that NELHA shall engage in retail, commercial, or tourism activities that will in turn financially support research, development, and commercialization at our current ocean science and technology park in Kailua-Kona. It is our position, that a business plan based on our current financial model would first need to be formulated to ensure that we could sustain operations at this new facility.

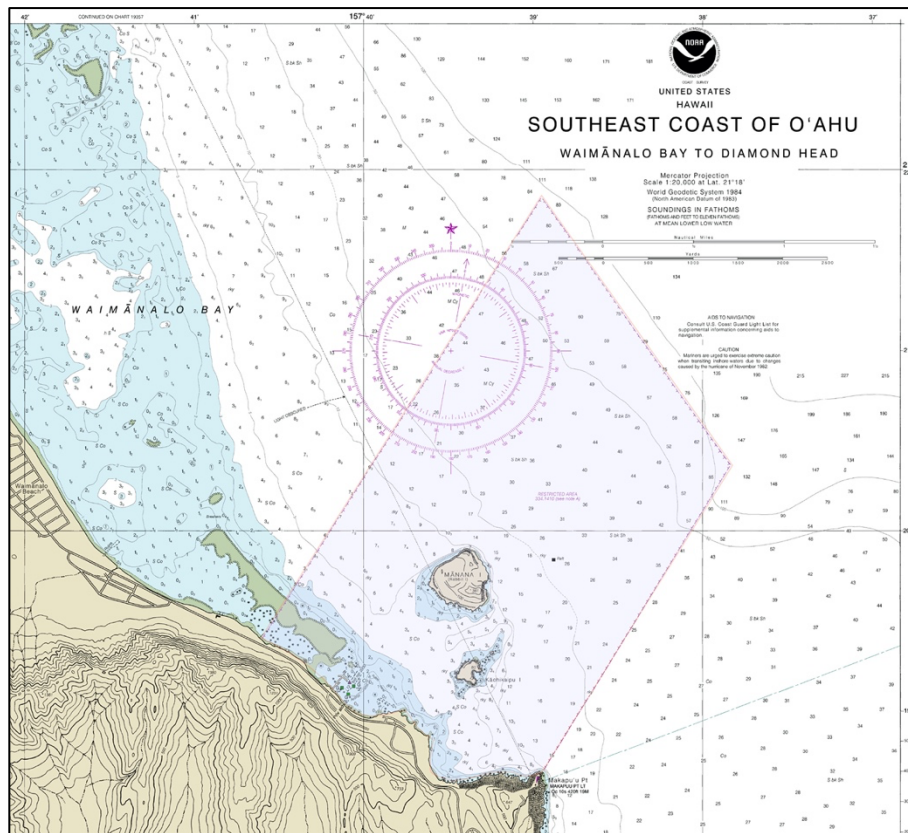
We are currently exploring a vision for the future of these assets listed above. The pier is a unique research platform for understanding the ocean's make-up. This facility could assist in reversing the cycle of decline in ocean health by assisting in developing technology which will provide better information related to ocean conditions. In addition, as political leaders and policymakers, the private sector, financial institutions, and local communities seek to reset and rebuild—and enhance resilience—in a post-COVID world, these assets may afford an opportunity to partner on the rapid transition to a sustainable ocean economy as part of a blue recovery that reflects these investments and benefits. Now, more than ever, we need a healthy ocean to provide key ecosystem services and benefits that are crucial for a sustainable future.

Many believe that the ocean will dominate the global economy of the 21st century. The Organization for Economic Cooperation and Development (OECD) estimated the size of the so-called emerging “blue economy” at over \$1.5 trillion USD in 2010 and on track to double that by 2030. There are strong underlying industry fundamentals propelling this growth. The ocean is increasingly recognized as providing huge potential for boosting economic growth, employment, and innovation and as a large ocean State, Hawaii has a significant comparative advantage.

We believe that structural changes to Hawaii's economy in a world after the Great Pandemic of 2020, if planned properly such as to strike the right balance between expanding our oceans' economic potential with the need to safeguard the longer-term health of our ocean, could be centered around developing a “blue economy” focused on the ocean. Hawaii could eventually be a global epicenter for bluetech innovation. We believe that the most promising utilization so far includes the utilization of the pier as part of an accelerator/incubator that would focus on ocean technology. This would include research and

demonstration and innovation of deep-sea exploration, ship automation, surface and underwater drones and navigation, ocean energy, offshore aquaculture, remote sensing, and naval architecture as well as innovation to address ocean-related environmental challenges necessary to adapt to climate change and ocean acidification including the areas of ocean health monitoring, natural hazards and early warning systems, ocean observation and instrumentation, ocean data visualization, pollution monitoring, marine conservation, and marine archaeology.

Thank you for the opportunity to offer these comments.





Statement of
Hermann Kugeler
Business Development Manager
Makai Ocean Engineering, Inc.
before the
House Committee on Water & Land
Thursday, February 11, 2021
8:30am

Via Videoconference, State Capitol, Conference Room 430
In consideration of
HB1280
RELATING TO THE NATURAL ENERGY LABORATORY OF HAWAII
AUTHORITY.

Chair Tarnas, Vice Chair Pihana Branco, and Members of the Committee

Makai Ocean Engineering, Inc. **SUPPORTS HB1280** that Authorizes the director of finance to issue general obligation bonds for the natural energy laboratory of Hawaii authority to repair and upgrade the makai research pier.

Makai is a locally-owned and operated technology company based in Hawai'i, located on the Makai Research Pier for over 48 years. Makai is at the forefront of R&D and engineering services on a variety of growing ocean technology programs, including autonomous underwater vehicles, next-generation machine learning controls and navigation, submarine and subsea cable systems, offshore deep water wind, ocean thermal energy conversion (OTEC) and seawater air conditioning (SWAC) systems, and a Department of Energy project to grow and harvest macroalgae offshore in Hawaiian waters for food and future energy products.

Makai has called the Makai Research Pier home since our formation in 1973, and since then, has continued to grow and expand the ocean-based industry here in Hawai'i. Makai currently has 36 employees, with offices at the Makai Research Pier supporting 21 full-time on-site employees and up to 5 University of Hawaii College of Engineering interns. Makai's reputation in key areas of the growing "Blue Economy" creates a strong position and outlook for steady growth well into the future. The Makai Research Pier is a significant factor, providing a critical resource and key differentiator for our business, and by extension, the growth of a diversified workforce in the marine industry in Hawai'i.

The pier needs immediate repairs on the order of \$500,000 and urgent repairs overall totaling an estimated \$5,000,000. The pier has sustained structural damage over the years that requires these significant repairs to be made in order to maintain operational condition. This bill will allow those repairs to be made before the damage worsens to a point that the pier is no longer usable or recoverable.

Makai has been successful in bringing in tens of millions of dollars in funds from federal, commercial, and international sponsors to Hawai'i, due in large part to our offices located on the



Makai Research Pier. A majority of Makai's services and products are exported out of state with recent clients being Department of Defense (DoD) programs in the Office of Naval Research (ONR), NAVFAC, NAVAIR, NAVSEA, Army, United States Air Force (USAF), Defense Advanced Research Projects Agency (DARPA); Department of Energy (DoE) programs in Advanced Research Projects Agency – Energy (ARPA-E); and a commercial business network around the world including Lockheed Martin, AT&T, Prysmian Group, IT Telecom, Orascom, DEME, and many others.

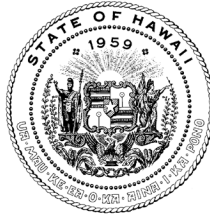
The pier provides us with a location to rapidly prototype hardware, and easily access the ocean waters where we can test these systems. This ocean water access that the pier facility provides allows Makai to save our clients time and money throughout the development process. Without the appropriated funds to repair the pier, the damage to the pier will soon worsen to a point that it is no longer safe to operate on the pier and the tenants like Makai must leave, along with it the existing jobs and the potential future growth. It is our opinion that, due to a number of circumstances, a pier of similar capability for marine research and operations would never be constructed in Hawai'i again within our lifetimes. Loss of the pier would not only impact Makai and current pier tenants, it would be a permanent and irreplaceable loss to the State for any future marine industry and research.

The Makai Research Pier and Makai's work have helped to stem the tide of "brain drain" of talented kama'aina kids going to the mainland. The Makai Research Pier facilities have allowed Makai to make a strong economic impact in terms of high paying jobs, and demonstrated success in commercializing R&D, which has increased taxable revenue for the state, and brought home kama'aina scientists and engineers.

This bill would allow the Makai Research Pier to remain operational and allow the Pier's tenants like Makai to continue to strongly compete and win against mainland peers in high quality federal R&D projects. Without the valuable resource that the pier provides, Makai and other pier tenants would lose our competitive advantage to mainland competitors that are closer to the clients, and the State of Hawai'i would lose an anchor to national and international ocean technology opportunities. The pier has allowed companies like Makai and other tenants to expand and diversify Hawai'i's economy, and enable our tech industry to support high-paying, highly-skilled professional jobs for our keiki here at home.

This is why we **SUPPORT HB1280**, which authorizes the director of finance to issue general obligation bonds for the natural energy laboratory of Hawaii authority to repair and upgrade the makai research pier, and allow the pier to remain operational.

DAVID Y. IGE
GOVERNOR OF
HAWAII



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 House Committee on
WATER AND LAND**

**Tuesday, February 11, 2021
8:30 AM**

State Capitol, Via Videoconference, Conference Room 430

**In consideration of
HOUSE BILL 1280**

RELATING TO THE NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY

House Bill 1280 proposes to transfer to the Natural Energy Laboratory of Hawaii operational authority over the Makai Research Pier located at the southeast corner of Oahu. Additionally, House Bill 1280 proposes to authorize the Director of Finance to issue general obligation bonds for the Natural Energy Laboratory of Hawaii to repair and upgrade the Makai Research Pier. **The Department of Land and Natural Resources (Department) supports this bill and offers the following comments.**

The Department notes that Makai Research Pier is under a lease to the University of Hawaii on the Department's land and submerged land. The Department respectfully requests both the University of Hawaii and the Natural Energy Laboratory of Hawaii seek the consent from the Board of Land and Natural Resources on the transfer of interest pursuant to the above-mentioned lease.

Thank you for the opportunity to comment on this measure.



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the
House Committee on Water and Land
February 11, 2021 at 8:30 a.m.

by
Kalbert K. Young
Vice President for Budget and Finance/Chief Financial Officer
and
Jan Gouveia
Vice President for Administration
University of Hawai'i System

HB 1280 – RELATING TO THE NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY

Chair Tarnas, Vice Chair Branco, and members of the Committee:

Thank you for the opportunity to submit testimony on HB 1280. The University of Hawai'i (UH) supports this measure which transfers to the Natural Energy Laboratory of Hawaii Authority (NELHA) operational authority over the makai research pier located at the southeast corner of O'ahu. This bill also authorizes the Director of Budget and Finance to issue general obligation bonds for the NELHA to repair and upgrade the makai research pier.

The UH currently has a lease from the Board of Land and Natural Resources (BLNR) for use of the makai research pier. In the past, the UH has conducted research activity at the pier and has also sub-leased facilities at the pier to private research partners. For several years now, the level of research utilizing the makai research pier by the UH has waned. The pier facility is currently used mostly by a sub-lease tenant.

The UH understands that NELHA is desirous of overseeing the makai research pier as an asset. The UH also believes that any of its future research activity that could entail using the makai research pier could be accommodated under the auspices of NELHA. The UH and NELHA have partnered on other research and projects. If NELHA is amenable to operating the makai research pier, the UH is supportive and would collaborate to effectuate transfer of the BLNR lease.

The UH also supports the HB 1280 appropriation of \$5,000,000 in capital funding to NELHA for making repairs and upgrades to the makai research pier.

Thank you for the opportunity to testify in support of HB 1280.

DAVID Y. IGE
GOVERNOR OF
HAWAII



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 House Committee on
WATER AND LAND**

**Tuesday, February 11, 2021
8:30 AM**

State Capitol, Via Videoconference, Conference Room 430

**In consideration of
HOUSE BILL 1280**

RELATING TO THE NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY

House Bill 1280 proposes to transfer to the Natural Energy Laboratory of Hawaii operational authority over the Makai Research Pier located at the southeast corner of Oahu. Additionally, House Bill 1280 proposes to authorize the Director of Finance to issue general obligation bonds for the Natural Energy Laboratory of Hawaii to repair and upgrade the Makai Research Pier. **The Department of Land and Natural Resources (Department) supports this bill and offers the following comments.**

The Department notes that Makai Research Pier is under a lease to the University of Hawaii on the Department's land and submerged land. The Department respectfully requests both the University of Hawaii and the Natural Energy Laboratory of Hawaii seek the consent from the Board of Land and Natural Resources on the transfer of interest pursuant to the above-mentioned lease.

Thank you for the opportunity to comment on this measure.



Sea Engineering, Inc.

Makai Research Pier • 41-305 Kalanianaʻole Hwy • Waimanalo, Hawaii 96795-1820
Phone: (808) 259-7966 • E-mail: hi.engineering@seaengineering.com • Website: www.seaengineering.com

Statement of
Marc Ericksen
Vice President, Sea Engineering, Inc.
before the
House Committee on Water & Land
Thursday, February 11, 2021
8:30am
State Capitol, Conference Room 430
In consideration of
HB1280
RELATING TO THE NATURAL ENERGY LABORATORY OF HAWAII
AUTHORITY.

Chair Tarnas, Vice Chair Pihana Branco, and Members of the Committee

Sea Engineering, Inc. **SUPPORTS HB1280** that “Transfers to the natural energy laboratory of Hawaii authority operational authority over the makai research pier located at the southeast corner of Oahu. Authorizes the director of finance to issue general obligation bonds for the natural energy laboratory of Hawaii authority to repair and upgrade the makai research pier.”

Sea Engineering, Inc (SEI) is a locally-owned and operated maritime company based in Hawaii, located on the Makai Research Pier since 1980. SEI was founded in 1973 by two University of Hawaii graduates to provide marine-related engineering, construction and diving services. Today, we have 60 employees and office locations at Makai Pier, Honolulu Harbor and California.

Our core services include coastal engineering, marine geophysical surveys, sea level rise vulnerability assessment, oceanographic and environmental studies, as well as waterfront construction, and commercial diving. We also provide workboats and other support services for marine activities. Sea Engineering provides unique design and maintenance services to the Hawaii State harbor system. Since 2007, SEI has completed nearly 100 projects in Hawaii State Harbors. SEI has designed award winning projects to improve and maintain Waikiki Beach, and last year won the Hawaii General Contractors Association Grand Award for the USS Arizona Memorial Floating Dock damage repairs.

SEI provides valuable employment opportunities for locals and University of Hawaii graduates:

- 11 of our 13 engineers and scientists are UH graduates – ocean engineers, civil engineers, oceanographers, coastal geologists.
- We continuously support UH students with internships.
- In the past 5 years, we have supported 4 students in the Department of Ocean and Resources Engineering (ORE) at UH with research assistantships; these students are now SEI employees.
- Over the years, we have employed over 25 UH students and graduates, and supported 8 student interns.



Dr. David Smith, our Senior Engineer, is Affiliate Faculty with ORE, and annually is a co-instructor in the capstone design class. Dr. Smith received in undergraduate and PhD degrees at UH.

Our location at the Makai Pier has been an important factor in the successful operation and growth of the company. The pier is a unique facility providing ready access to oceanic water for testing of our equipment and systems. The pier needs immediate repairs on the order of \$500,000 and urgent repairs overall totaling an estimated \$5,000,000. The pier has sustained structural damage over the years that requires these significant repairs to be made in order to maintain operational condition. This bill will allow those repairs to be made before the damage worsens to a point that the pier is no longer usable or recoverable. There is no question that due to present day stringent regulatory and environmental requirements, a pier of similar capability for marine research and operations could not be constructed in Hawaii again. Loss of the pier would not only impact SEI and current pier tenants, it would be a permanent and irreplaceable loss to the State for any future marine industry and research.

This bill would allow the Makai Research Pier to remain operational and allow the Pier's tenants like SEI to continue to grow and provide high-paying, rewarding jobs for locals, and provide the State of Hawaii with firms that are leaders in the marine industry.

This is why we **SUPPORT HB1280**, which “Transfers to the natural energy laboratory of Hawaii authority operational authority over the makai research pier located at the southeast corner of Oahu. Authorizes the director of finance to issue general obligation bonds for the natural energy laboratory of Hawaii authority to repair and upgrade the makai research pier.”