JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

JAMES KUNANE TOKIOKA
DIRECTOR

DANE K. WICKER
DEPUTY DIRECTOR

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
KA ʻOIHANA HOʻOMOHALA PĀʻOIHANA, ʻIMI WAIWAI A HOʻOMĀKAʻIKAʻI

No. 1 Capitol District Building, 250 South Hotel Street, 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804
Web site: dbedt.hawaii.gov

Telephone: (808) 586-2355
Fax: (808) 586-2377

DEPT. COMM. NO. 330

DTS: 202512231338ED

December 23, 2025

The Honorable Ronald D. Kouchi
President and Members
of the Senate
Thirty-Third State Legislature
State Capitol, Room 409
Honolulu, Hawaiʻi 96813

The Honorable Nadine K. Nakamura
Speaker and Members of the
House of Representatives
Thirty-Third State Legislature
State Capitol, Room 431
Honolulu, Hawaiʻi 96813

Dear President Kouchi, Speaker Nakamura, and Members of the Legislature:

I am transmitting a copy of the Natural Energy Laboratory of Hawaiʻi Authority Annual Report 2025, as required by Hawaii Revised Statutes, Chapter 227D-3.

In accordance with Section 93-16, Hawaiʻi Revised Statutes, I am also informing you that the report may be viewed electronically at:
http://dbedt.hawaii.gov/overview/annual-reports-reports-to-the-legislature/.

Sincerely,

James Kunane Tokioka
DBEDT Director

Enclosure

c: Legislative Reference Bureau

Natural Energy Laboratory of Hawaii Authority



2025

Annual Report

mission statement:

"To develop and diversify Hawai'i's economy by providing resources and facilities for energy and ocean-related research, education and commercial activities in an environmentally-sound and culturally-sensitive manner."

Chapter 227D-3 Hawaii Revised Statutes



nelha.hawaii.gov | hostpark.io

table of contents

NELHA's Mission Statement 2

Roots of HOST Park 5

Economic Conditions & Immediate Priorities..... 7

NELHA Activities Alignment with HRS Chapter 227D 11

HOST Park Clients 2025 12-13

Community Alignment 15

HOST Park Management..... 19

Seawater System 23

Entrepreneurial Ecosystem 27

Financials FY 2025 31

NELHA Team 32

Board of Directors 33

Appendix: Historical Timeline of Major Events
(1974 - 2025) 34-39





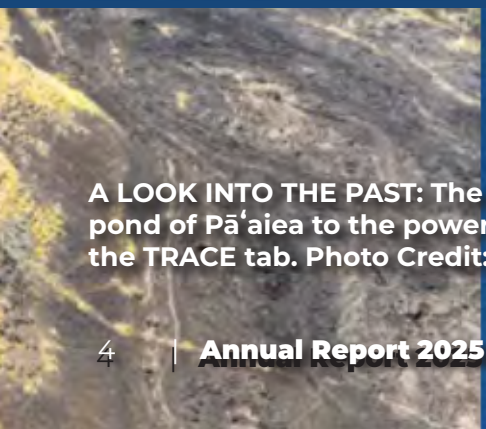


WHERE IT BEGINS

PĀʻAIEA, THE STORIED FISHPOND OF KAMEHAMEHA

Buried beneath a rust-colored flow of pāhoehoe lies a place of abundance, engineering, and legend. Pāʻaiea, once an enormous, thriving loko iʻa on the North Kona coast was filled by lava flows in 1801. What was lost from the landscape still lives in the winds, the stones, and the knowledge passed forward.







A LOOK INTO THE PAST: The land beneath HOST Park holds centuries of stories, from the royal fishpond of Pāʻaiea to the powerful Hualālai lava flows. Historical events presented at hostpark.io under the TRACE tab. Photo Credit: Rae Nguyen

Roots of HOST Park

The Hawai‘i Ocean Science and Technology (HOST) Park sits on a landscape shaped by geology, culture, and innovation. Its story begins with the powerful natural forces that formed the Keahole coastline.

Situated on the western flank of Hualālai volcano, the area is defined by young lava flows, porous pāhoehoe, and an exceptionally steep offshore drop-off that allows access to some of the coldest, purest deep ocean water on Earth.

This unique natural environment is the foundation for world-leading ocean science, energy research, and aquaculture that take place at HOST Park today.

Long before the park existed, the area held deep significance for Native Hawaiian communities.

Along this coastline once stood Pa‘iea Fishpond, a traditional loko i‘a named for its stone walls, freshwater inputs, and connection to thriving coastal food systems.

Hawaiian aquaculture was an advanced and sustainable practice, integrating marine engineering, ecological knowledge, and community stewardship.

Fishponds like Pa‘iea supported local subsistence, strengthened social networks, and embodied the principle of aloha ‘āina — caring for the land and sea that sustain life.

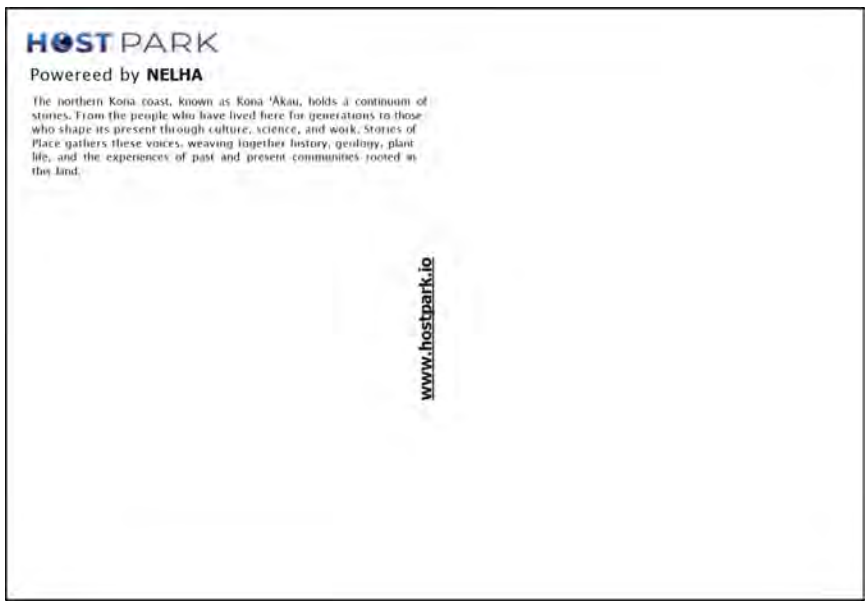
These cultural foundations continue to inspire the work at HOST Park. Modern companies and researchers at the site explore innovative forms of ocean-based food production, renewable energy, and sustainable water use.

Many of these efforts — such as microalgae cultivation, deep seawater applications, and modern aquaculture — echo the ingenuity of traditional Hawaiian resource management.

Today, HOST Park is not just a hub for technology — it is a living landscape where natural history, cultural heritage, and scientific progress intersect.

Its story is one of connection: to place, to the ocean, and to the long-standing Hawaiian tradition of innovation rooted in respect for the natural world.





SENDING HISTORY: These postcards, depicting King Kamahemeha's storied Pā‘aiea Fishpond are part of NELHA's efforts to share the cultural history that anchors HOST Park. Photo Credit: Tetrachrome

Economic Conditions & Immediate Priorities

NELHA's role in the broader Hawaii economic landscape is to provide diversification, specifically on Hawaii Island. The state led innovation cluster strategy was pursued with an emphasis on the blue economy and renewable energy given the assets available at HOST Park.

The sectors supported by NELHA's activities proved to be one of the more resilient during the pandemic; none of the businesses closed during that time.

The HOST Park collectively contributed over $140M in economic impact supporting 700 jobs and providing $7M to the State in tax revenues in calendar year 2022.

In 2024, 7 new companies joined the HOST Park ecosystem while another 9 joined in 2025.

However, others have left the dynamic startup ecosystem accounting for a stable client base in terms of total number of businesses and revenues to NELHA.

The HATCH accelerator, which has been federally funded for the last 4 years assisted in valuable business guidance and financial support to some of the new companies, ended its physical presence at HOST Park in October 2025.

The companies at NELHA attract outside investment and have significant exports, both important for the State of Hawaii's economic wellbeing.

More importantly they all have a focus on sustainability, critical for long-term Hawaii and planetary wellbeing.

The HOST Park organizations occupy approximately 280 acres. The sea water and other utility infrastructure occupies 55.6 acres while undevelopable lands such as conservation, beach park and ocean setbacks take up 190 acres, leaving approximately 360 acres left for potential projects.

It is important to note that this land is ungraded and the cost of grading (currently on the order of $200,000/acre due to high construction costs in West Hawaii Island) is a serious barrier to large incoming projects.

Potable water allocations established when HTDC first created HOST Park in the late 1980s, limit the number of allowable subdivided lots within the park to the 24 already existing. To allow for further development of space within the park, the potable water restriction must be addressed.

HOST PARK COORDINATES
19.71595945050406, -156.0339520030186

MISSION STATEMENT:

"to develop and diversify the Hawaii economy by providing resources and facilities for energy and ocean-related research, education and commercial activities in an environmentally sound and culturally-sensitive manner."

$145M

TOTAL ECONOMIC IMPACT GENERATED AT HOST PARK IN 2022.

FOCUS ON:

- conservation
- energy conservation
- ocean technology
- food security

keāhole point

from its shoreline, the point's bathymetry or water depth measurement in oceans is a steep drop, plummeting to 2,500 ft.

HOST Park

or Hawaii Ocean Science Technology Park serves as an outdoor demonstration site for emerging renewable and ocean-based technologies.

Over 50 companies, ranging from entrepreneurial startups to established commercialized firms are based at HOST Park.

FAST FACTS

- **land - 870 acres**
- **high solar insolation - just one day less sunny than Las Vegas, and Tucson over one year**
- **more than 20M gallons of seawater pumped daily**
- **land dedicated to renewable, ocean & sustainable industries**

TYPES OF COMPANIES

AQUACULTURE | TECHNOLOGY
CONSERVATION | ENERGY
EDUCATION | OTHER

10 MILES of pipeline system plumbed throughout HOST Park and delivering surface and deep seawater nonstop 24/7.

The current first-ranked solution is to develop a new County-dedicated source of water referred to as “Ota Well”.

The well development project, started in 2015, is a partnership with HHFDC, and now includes working with CWRM on an Adaptive Management Plan (AMP) upon which future development of this well (and possibly others in North-Kona) may well depend.

The AMP contributors include subject-matter experts, the Native Hawaiian Legal Corporation, Aha Moku, DHHL, private developers, environmental NGOs and cultural practitioners.

Other efforts to address the water crisis at HOST Park include developing a plan for NELHA to diversify its water sources - for example by including desalination utilizing renewable energy, as well as documenting new sub-ocean fresh or brackish water resources for possible future development.

Within the main sectors covered by NELHA’s portfolio of companies, there is overlap with respect to addressing food security, advanced manufacturing and other areas that are part of Hawaii’s efforts to further economic development and sustainability and which are covered by other State departments and/or agencies. NELHA continues to partner with sister agencies in relevant areas.

NELHA faces ongoing fiscal challenges. The mandate to be self-sufficient has resulted in the agency being chronically under-resourced causing an increasing deferred maintenance backlog and slower progress towards full HOST Park development.

It also means that NELHA is limited in its ability to support important R&D efforts in the energy and food sustainability sectors.

Other challenges are part of Hawaii’s economic tapestry and include high labor costs, high cost of living, housing shortage for workers at HOST Park, high construction cost associated with undeveloped dense lava rock the new projects need to develop themselves, and shipping that is costly and at times unreliable for live products.

Special challenges also include long delays or inability to obtain permits and the inability to make progress on obtaining additional freshwater for the park.

Amidst these conditions, only commercial initiatives with reasonably high profit margins are likely to succeed.

To meet these various challenges, NELHA is conducting updates of its strategic plan, economic development plan, land use plan, natural & cultural resources plan, open space and public spaces plan, infrastructure and facilities plan, and finally the design and implementation plans which will involve efforts to assess changing conditions and future aspirations, and possibly involve pivoting in some areas of the existing master plan which in turn might affect priorities and goals.

The master plan updates will be followed by an EIS update. Both the master plan and EIS updates are supported by CIP funds appropriated in FY2022.

These activities which started in Q3 and Q4 of 2024 will engage a wide variety of stakeholders including NELHA's new Executive Director, Riley Saito, who started in February 2024.

NELHA is also actively engaged in addressing immediate capital improvement needs by purchasing and installing seawater system pumps and other seawater system components to address the immediate onshore deferred maintenance needs.

These items are part of a broader list of CIP needs with a 1, 3- and 10-year horizon to maintain the NELHA infrastructure sustainability into the future.

NELHA is actively engaged in seeking funds to cover the entirety of the planned repairs and maintenance necessary to continue operating a unique and world class ocean tech park.



CULTURAL FUTURES: Hualālai's lava flows meet the coastline at Keāhole Point, where HOST Park sits at the edge of the Pacific; Maui appears faintly in the distance. Photo Credit: Tetrachrome

How do NELHA Activities and Accomplishments Align with HRS Chapter 227D?

HRS 227D	FY 2025
7 Stated Purpose/Duties	**Activities/Efforts/Initiatives**
Establish, manage, operate facilities (R&D, Commercial, Educational)	Continued engagement with Pā Pāʻaiea cultural group.
	Engaged in solving West Hawaii and HOST Park freshwater challenges including participation in CWRM Adaptive Management Plan solution
	Creation of a plan to manage Hoʻonā Preserve
	Completed underwater offshore survey for sources of freshwater, report is pending
Provide support, utilities, services	Seawater system maintained 99% uptime
	Developed 10-year deferred maintenance plan
Maintain physical structure of facilities	Retrieved 273 ft abandoned breakaway 16” ocean pipeline
	Repaired 5 waterline breaks and addressed 2 water hammer events
Promote and market facilities	Expanded new hostpark.io website and online tour to include cultural and historical research
Promote and market available natural resources	Student tours (reached 1,000+ K-12 kids)
	Implemented quarterly Talk Story program
Support ocean research and tech that support national and state interest, use facilities and foster commercial development	Initiated onshore EIS
	Continued work on Master plan and onshore EIS update
	Supported over 55 companies/projects at HOST Park
	Completed 4 year federally funded aquaculture incubator project.
Engage in retail, commercial and tourism activities	Notable new tenants: Captura, Inc. Kona Sablefish Company, Sea Dragon Energy Inc.
	Supported assignment of Big Island Abalone, an established commercial company.

HOST Park Clients 2025

The majority of HOST Park's 54 projects in 2025 tap into the unique seawater system, with a small number of remaining clients joining to support other tenants or be part of West Hawai'i's only large-scale innovative tech ecosystem.

OCEAN SCIENCE

This category which includes aquaculture is the largest one by number and land use for NELHA.

It includes R&D and commercial companies that specialize in microalgae, seaweed, SPF shrimp, shellfish hatcheries, abalone production, seahorses and finfish.

Cyanotech
aquaculture, microalgae products including Spirulina and astaxanthin

NĀMAKA ALGAE
microalgae to create aquaculture feed

MOANA Marine Biotech
biotech company that develops shrimp breeding technologies

OCEAN ERA
fin fish, seaweed hatchery and research

Royal Hawaiian Sea Farms, Inc.
commercial aquaculture

Seahorse.com Ocean Rider Kailua Kona, Hawaii
aquaculture seahorses

Kona Butterfish Hawaii
aquaculture butterfish farm

KONA LIMU
seaweed farm

BIG ISLAND ABALONE HAWAII
abalone production

BLUE OCEAN BARNS
seaweed for reducing livestock methane emissions

Blue Ocean MARICULTURE
open ocean farm raising Hawaiian kanpachi fish

INDO-PACIFIC SEA FARMS
develops and sells aquaculture products for saltwater aquarium

JAMESTOWN Point Whitney SHELLFISH
oyster and clam nursery

KONA COAST NUTRIENTS
transforming invasive roi fish into premium organic fertilizer

PACIFIC HYBREED
shellfish breeding

PACIFIC PLANKTONICS
ornamental fish & shrimp culture of native Hawaiian species

PacificSeafood
oyster, clams, mussel hatchery and nursery

SIS SHRIMP IMPROVEMENT SYSTEMS
SPF shrimp

Symbrosia
seaweed for reducing livestock methane emissions

SINCE 1890 TAYLOR SHELLFISH Farms
oyster, clam, mussel nursery

SALTY DOG BRINE SHRIMP LLC
produce brine shrimp cysts

CONSERVATION:

This category includes companies whose main focus would be considered conservation whether it be ridge-to-reef efforts, ocean health or endangered species rescue work.

The work in this category is growing as more local and global attention is given to important conservation issues.

'ĀKO'AKO'A
coral reef restoration

Monterey Bay Aquarium
research on deep sea species

KE KAI OLA THE MARINE MAMMAL CENTER
monk seal rehabilitation center

MEGA LAB
ocean observing system

Terraformation
ridge to reef sustainability project

Dear Ocean
nonprofit ocean conservation

The Nature Conservancy
in-situ coral restoration pilot projects in West Hawaii

HOST Park Clients 2025

ENERGY AND OCEAN TECHNOLOGY:

This category includes companies involved in cutting edge energy R&D relevant to Hawaii such as OTEC, H2, solar and energy storage, as well as companies involved in climate solutions, ocean sensors and off grid manufacturing.

Some of these companies and projects are important to Hawaii's goal of meeting 100% clean energy by 2045.

APPARENT
Renewably-sourced, low cost, real-time carbon reduction technology

Physics, Materials, and Applied Mathematics Research L.L.C. PM&AM RESEARCH
research autonomous ROVs and sensor instrumentation

captura
direct ocean carbon capture company

HNEI Hawai'i Natural Energy Institute
hydrogen station R&D

CIMAR Cooperative Institute for Marine and Atmospheric Research UH • NOAA
acoustic monitoring

LightManufacturing Hawai'i Island
solar manufacturing and heliostats

MAKAI OCEAN ENGINEERING
OTEC research and development

NOAA
acoustic monitoring of Kona Coast for cetacean presence

orion SPACE SOLUTIONS
designs and launches satellites and ground stations to monitor space weather

Oregon State University
develop ocean tech for ocean health monitoring

NeuralX
AI monitoring for fish farming

SEA-BIRD SCIENTIFIC
instrumentation validation

SEATREC
R&D harvesting energy from environmental temperature differences

SEA DRAGON ENERGY, INC. INNOVATING ENERGY MOBILITY
extract carbon dioxide and hydrogen from seawater to create feedstock for jet fuel synthesis

antenna, government

OTHER:

The companies in these categories include academic and educational efforts such as a charter school and various University of Hawaii related projects as well as business ventures that capitalize on the deep seawater unique properties to create water and salt products.

Business support entities are also included in this category. These all help to form the unique NELHA tech park ecosystem.

ARL
conducts R&D to support Dept. of Defense and Navy

HATCH
aquaculture accelerator

HAWAI'I SBDC SMALL BUSINESS DEVELOPMENT CENTER
business advising, capital formation assistance

ISLA
research, infrasound monitoring

KOYO USA CORP Hawaii Deep Sea Water
production of deep seawater products, desalination and bottling

KONA DEEP
production of desalinated deep seawater beverages and products

KONA SALT FARM SEA SALTS OF HAWAII
extracts salt from deep seawater

Matsuyama Food and Fuel
convenience store with HOST Park products and fueling station

THLE PRO
live streaming service

Path Technologies
software development

WHEA
charter school for grades 6-12



THE POWER OF THE OCEAN: The Makai Research Campus within HOST Park is home to a diverse ecosystem of aquaculture companies. These businesses harness the unique advantages of our location, utilizing both warm surface water and cold, nutrient-rich deep seawater to optimize operations, drive breakthroughs, and cultivate world-class marine products. Photo Credit: Tetrachrome

Community Alignment

PUBLIC ENGAGEMENT AND RELATIONS



KEY ACCOMPLISHMENTS

- Launch of Cultural History on HOSTPark.io
- Bridging Partnerships with DOT KOA
- Quarterly Community Talk Story Sessions
- School Tours, Internships and Career Fairs
- Currently Updating Master Plan and EIS

COMMUNITY ALIGNMENT

Objective: Continue to align NELHA goals to the changing needs of the community that ultimately fosters comprehensive growth which supports the community.

A cultural advisory hui named Pā Pāʻaiea, consisting of community members and lineal decedents from West Hawaii, was established to assist in redefining NELHA's vision, mission, values, and priorities for HOST Park and it's role in the broader region.

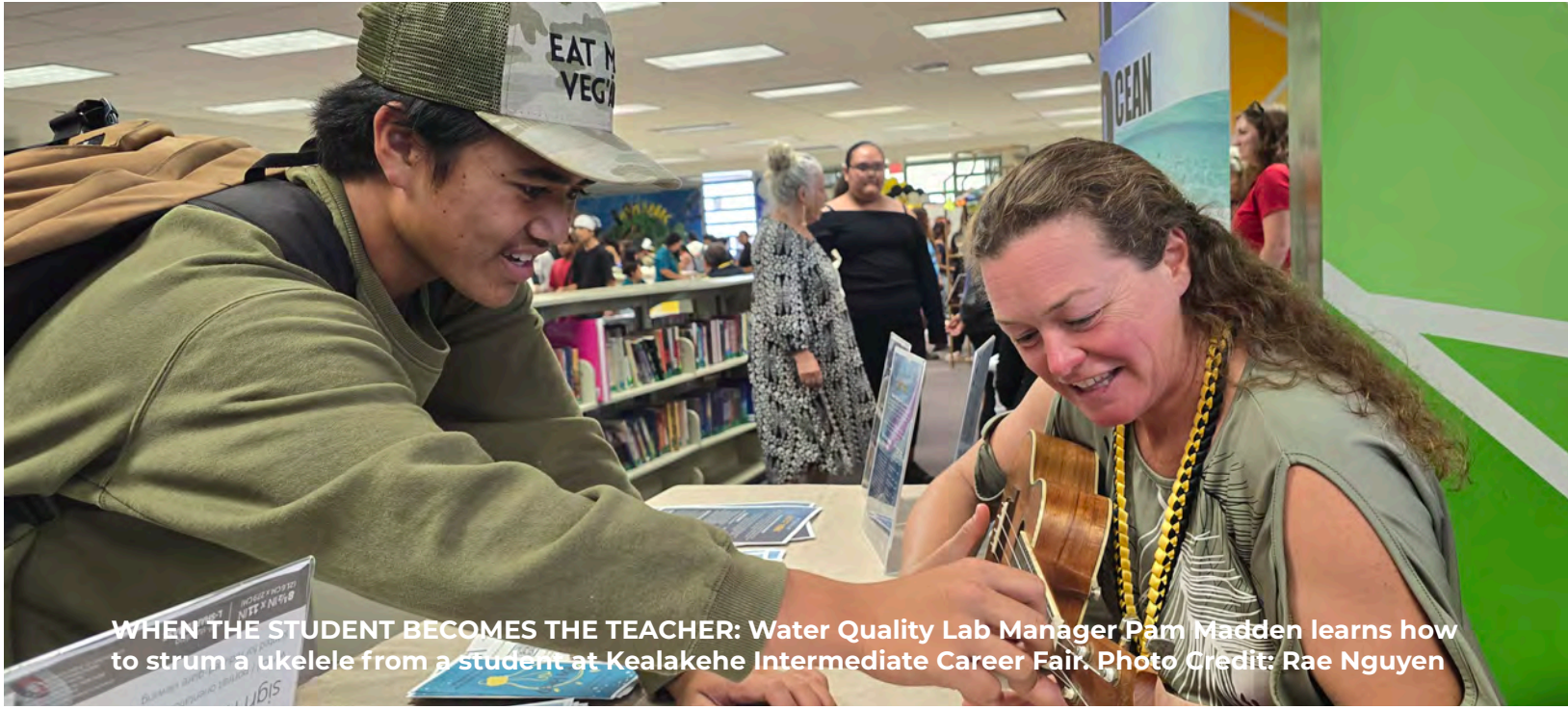
The hui continues to provide input, feedback, and suggestions on how to improve NELHA's plans to address the community needs and understand expectations to ensure that plans reflect the community's diverse perspectives and interests.

Work done by this hui has led to improvements to the proposal and business plan evaluation methodology by NELHA staff as well as prioritization of Ka Pa'aikai analysis and community outreach when conducting environmental reviews of proposed projects for HOST Park.

The hui's work, initially facilitated by Sea Grant and The Nature Conservancy, continues and is evolving as the hui members establish a framework for continued and future engagement.



SMILES, SHAKAS AND BIG DREAMS: Kealakehe High School students throw up shakas as they explore career options at their annual career fair held at the school's gym. Photo Credit: Rae Nguyen



WHEN THE STUDENT BECOMES THE TEACHER: Water Quality Lab Manager Pam Madden learns how to strum a ukelele from a student at Kealakehe Intermediate Career Fair. Photo Credit: Rae Nguyen

NELHA significantly increased its community outreach and engagement efforts throughout 2025. This included actively engaging the public through quarterly talk stories, pau hanas with Germinate by HIPlan, Hawaii Sea Grant's brown bag talks, CPR/AED training with neighbor KOA ARFF and client open house events hosted by Symbrosia and Ke Kai Ola.

Recognizing the critical nature of workforce development, NELHA has been highly active in both K-12 school tours and career fairs. Since its implementation in November 2023, the school tour program has hosted more than 1,600 students.

This program provides an interactive presentation, a walking tour, and touch sensory displays designed to show children the bright future for jobs in Hawaiʻi across fields like aquaculture, marine technology, renewable energy, and ocean conservation.

Looking ahead, NELHA is further expanding its community activities by planning the first-ever community fun run, designed to foster local connection and support.

At the same time, NELHA continued to collaborate with workforce development partners such as Good Jobs Hawaii, Palamanui Community College, UH Hilo, Kupu Aina, Sea Grant, ClimbHI, Akamai workforce development and others to help meet the workforce needs of the companies establish at HOST Park and provide high quality local STEM jobs.

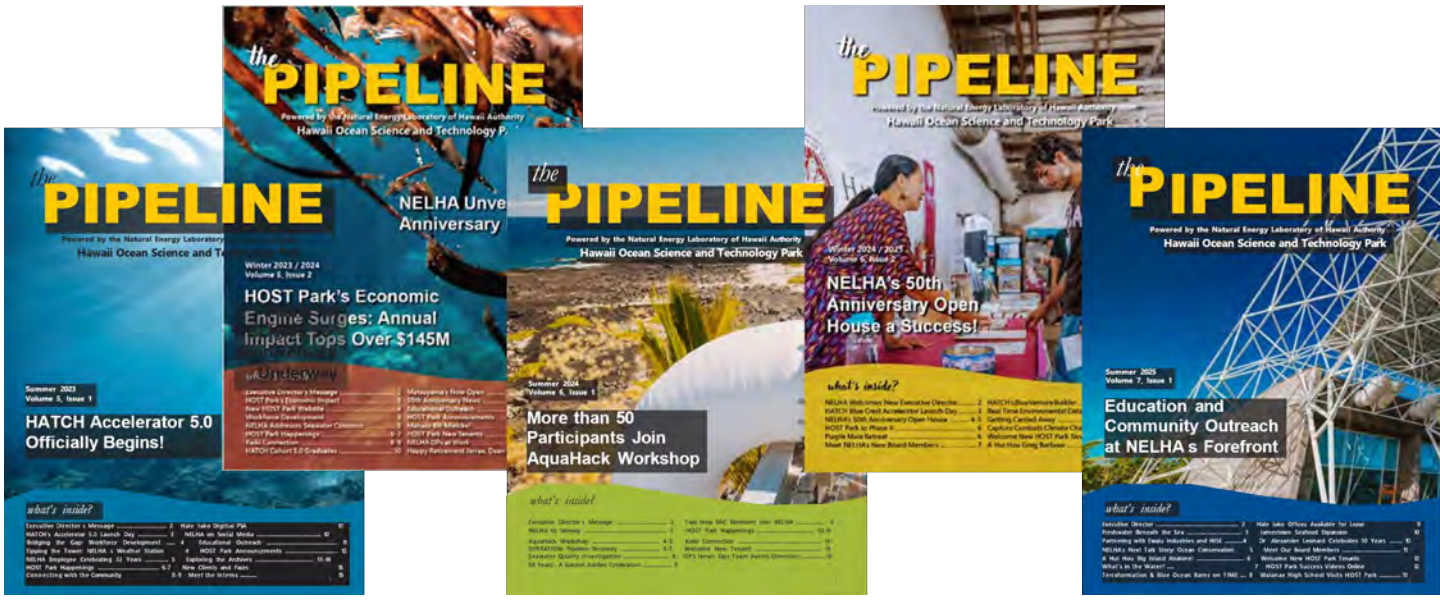


NEIGHBORLY RELATIONS: Ellison Onizuka Kona International Airport ARFF visit HOST Park to educate NELHA staff for the National Great Shakeout! Photo Credit: Rae Nguyen

NELHA maintains a consistent and transparent connection with its stakeholders by faithfully producing a semiannual newsletter for both the winter and summer seasons.

These issues provide comprehensive coverage of the latest HOST Park happenings, featuring in-depth articles on key HOST Park priorities, client achievements, and upcoming community events. This publication serves as a vital tool for communicating progress across the Blue Economy sectors.

To read the latest or peruse past issues, visit:
nelha.hawaii.gov/resources/library/nelha-newsletters



HOST Park Management



KEY FEATURES

- 870 Acres Master-Permitted
- 65-Year Lease from State of Hawaii Expiring 2066
- Outdoor Energy and Marine Demonstration Site
- World's Largest Seawater Delivery System
- NELHA Executive Director Hired Feb. 2025

Objective 1: Grow revenue by increasing lease of land and sale of seawater to maintain operating self-sufficiency.

NELHA continued to maintain self-sufficiency in 2025 while at the same time contributing $674,620 on FY2025 to the Office of Hawaiian Affairs as part of its obligations to provide a percentage of revenues generated from ceded lands, which are former Hawaiian Kingdom lands. This is the largest contribution to OHA that the agency has made to date.

As no general funds nor CIP funds were received in FY2025, NELHA covered its operational and special projects expenses through a variety of revenue streams which include lease of land and space, sales of seawater, and sales of services.
NELHA secured nine additional tenants, over that time, among them is Captura, Inc., Kona Sablefish Company, and Sea Dragon Energy Inc.

Captura is a marine carbon capture demonstration project that extracts CO2 from seawater to offset greenhouse gas accumulation in the atmosphere and reduce the pace of global warming. Users of the extracted CO2 include aquaculture companies in HOST park offsetting their importation of CO2, and whose technology aims to address climate issues.

Kona Sablefish is targeted to produce a cold-water fish that is prized in Hawaii and plans to primarily sell it locally.

Sea Dragon is implementing a jet fuel R&D project using marine CO2 and H2 to address energy security and has leased out the newly acquired Mauka Research Campus building.



CLIMATE ACTION: Captura and Equinor's latest Direct Ocean Capture (DOC) pilot plant at HOST Park has been operational since February 2025. Captura's 1,000-ton facility validates the technology for large-scale use, preparing to deploy commercial systems worldwide. Photo Credit: Tetrachrome

NELHA also continued to support the HOST Park ecosystem and its clients by supporting expansion of projects such as Jamestown Whitney Ventures that produces clams and oysters.

Another notable example is ensuring the survival of an established and well-known commercial company, Big Island Abalone, saving 10 jobs and promoting local sales of abalone.

The Hale Iako building was at full capacity and fully leased out through FY2025. Mats4 started operations in 2025 and is expected to contribute significant percentage rent in the years to come.

At the same time, NELHA spent the first half of FY25 recruiting for the Executive Director position which was filed in February 2026 by Riley M. Saito.

NELHA's main challenge for continued revenue growth are posed by freshwater limitations in West Hawaii and the difficulty in obtaining approvals to permit new wells to provide additional freshwater.

Future growth will also likely be impacted by NELHA's ability to adequately address its deferred maintenance.

Objective 2: Increase accessibility to remaining undeveloped lands and increase potable water availability to allow for increased growth.

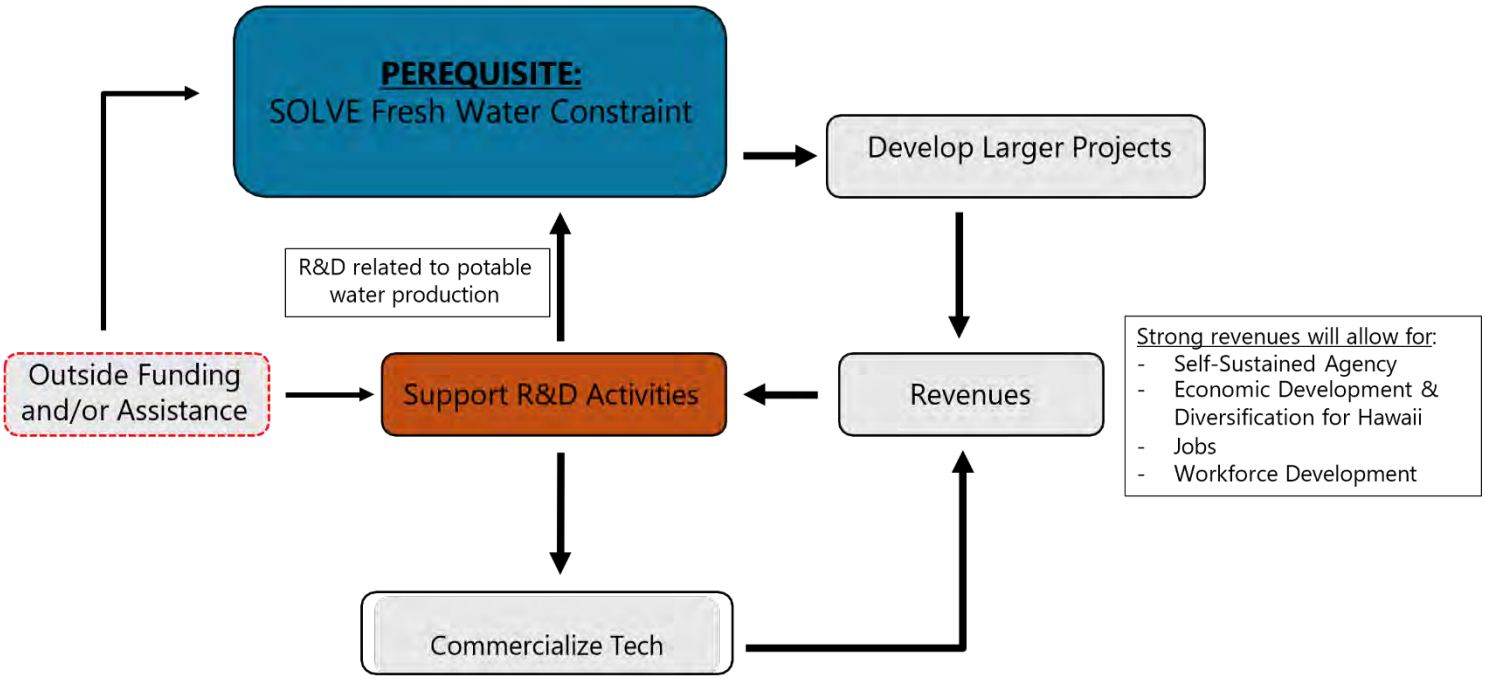
Freshwater continues to be a significant constraint for development of remaining lands at HOST Park (see land use schematic below). NELHA has unsuccessfully tried since 2016 to obtain a permit for a freshwater well at higher elevations in partnership with HHFDC and others.

FY2025 activities relating to this effort included working with CWRM and stakeholders on an Adaptive Management Plan (AMP) solution to make progress in addressing the water crisis.

The AMP aims to provide guidance for freshwater resource management in West Hawaii and hopefully will provide a path forward for NELHA and others in West Hawaii.

NELHA is also exploring alternative sources of freshwater. This includes evaluating the possibilities of producing water through reverse osmosis utilizing existing underutilized infrastructure at HOST Park. Progress has been made in securing funding for this solution.

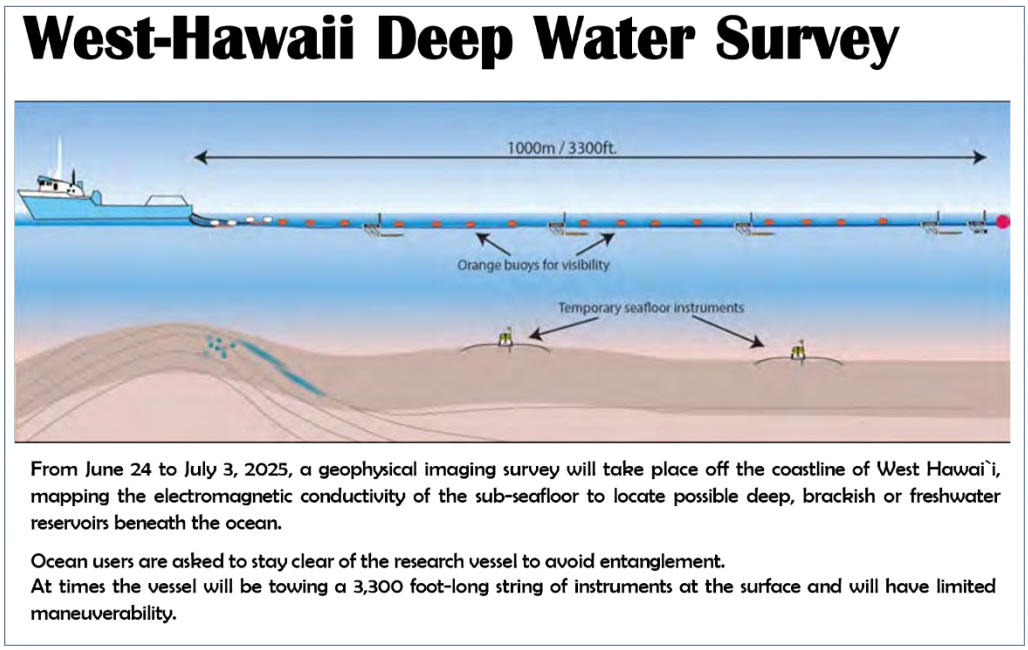
NEAR TERM LAND USE PRIORITIES:



Another way to address the West Hawaii water crisis could be to reshape the discussions and decisions around resource availability by locating and sizing previously unknown reservoirs of freshwater which might serve to fill the region's needs.

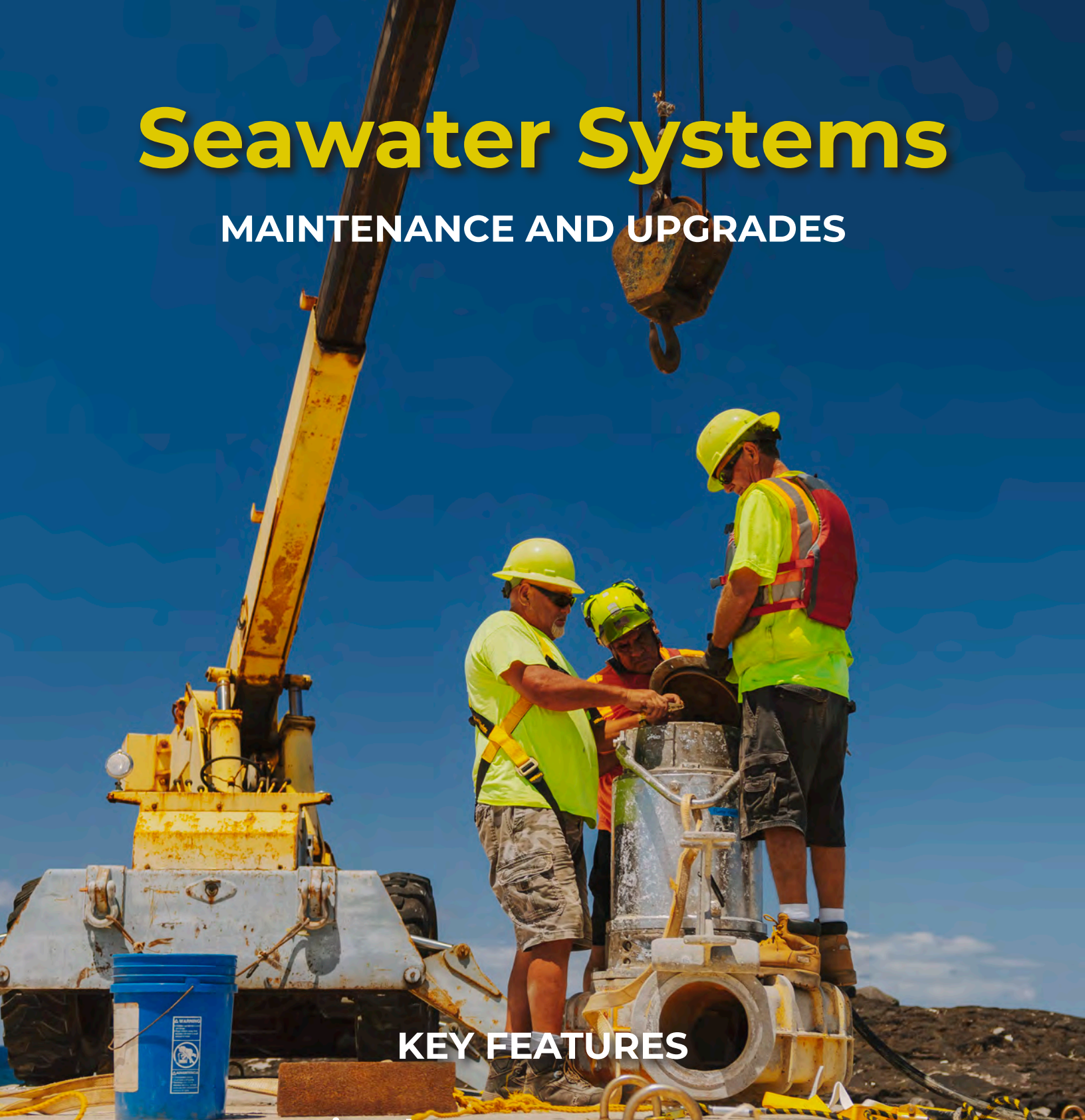
NELHA, with funding from the Hawaii State Legislature, contracted with researchers from the Hawai'i Institute of Geophysics and Planetology and Scripps Institution of Oceanography for a two-week offshore imaging survey in FY2025 with the aim to locate deep confined layers of water stretching from far inland to miles out to sea, and thereby solve the mystery of large quantities of water - long known to be "missing" from Hualalai aquifer.

The survey was completed, and the report is expected Q4 calendar year 2025. More information on this exciting project can be found at https://nelha.hawaii.gov/resources/freshwater-beneath-the-sea-2025/



Seawater Systems

MAINTENANCE AND UPGRADES

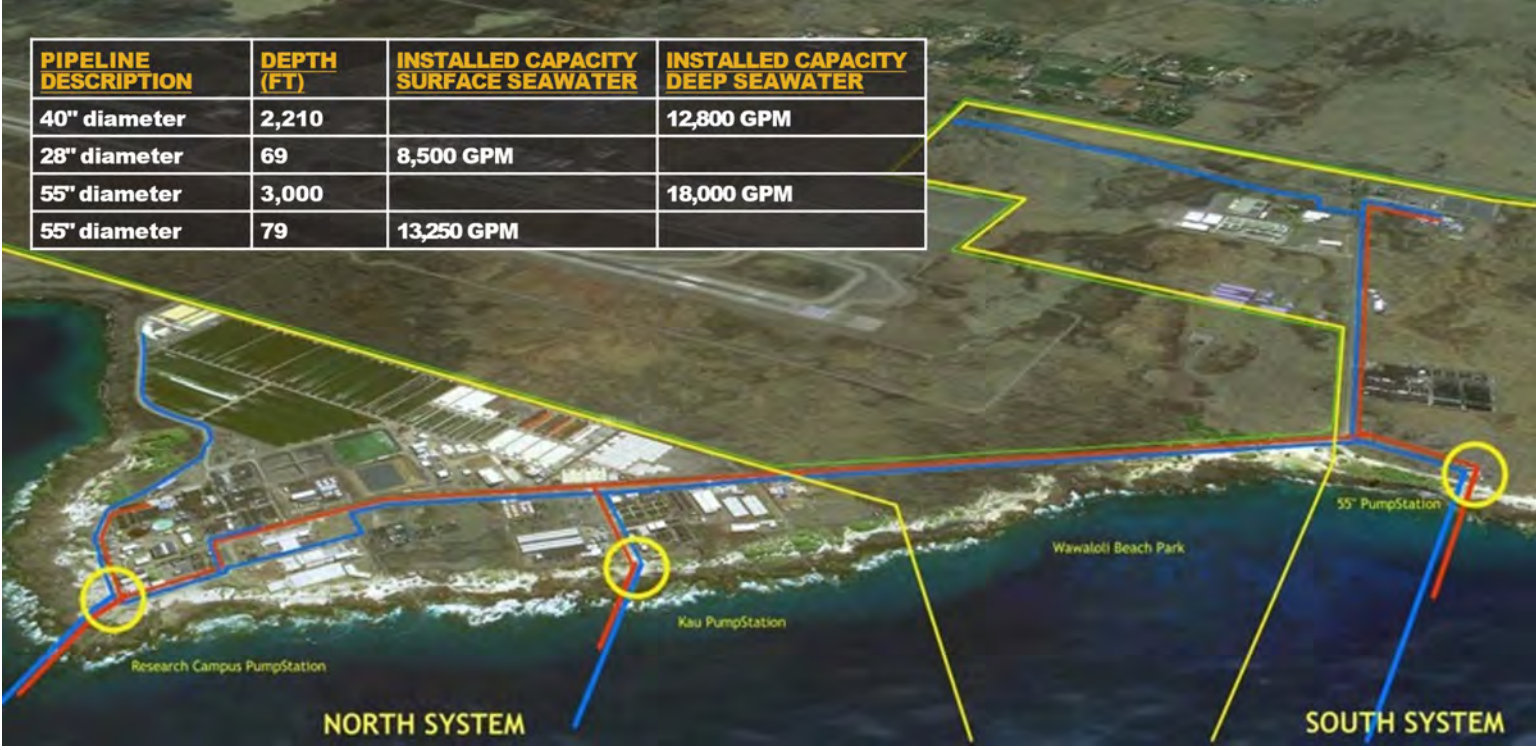


KEY FEATURES

- Master-permitted to pump over 130,000 gpm
- Installed capacity of 53,000 gpm
- Two deep seawater pipelines up to 3,000 ft. deep
- Two surface seawater pipelines at 80 ft. depth
- 99.9% uptime



MISSION COMPLETE: NELHA retrieved a 270 feet-long section of a pipe floating offshore of Keahole Point last June. Believed to be a portion of a now defunct pipeline 16A - one of six installed in the 1990s by a former tenant no longer in business. Photo Credit: Alex Leonard



Objective: Maintain reliability and increase energy efficiency of seawater system.

NELHA continued to maintain 99.9% uptime in 2025. This included the repair of five waterline breaks and addressed two water hammer events. In addition, the Operations Department coordinated the retrieval of a 273 ft breakaway ocean 16" pipeline, a large ocean safety hazard, within 2 days.

A 10-year plan to address deferred and future maintenance was created and CIP requests were submitted to fund the work.

CIP funds allocated in the form of reimbursable bonds in FY2024 provided a head start on executing the plan. Procurement for these funds is complete and some installations such as pump installations were implemented.

It is expected that the remaining installations funded by FY2024 CIP will be completed by mid-2026. Additional funds have been requested for the next phase of the plan.

To address public safety concerns, NELHA completed the design, plan, and estimate for the removal of offshore pipelines owned, installed, operated, and abandoned by Ocean Farms, a bankrupt company operating in the 1980's. NELHA will be seeking funds from the legislature to complete the removal.

Finally, NELHA implemented a variety of recommendations to improve water quality for aquaculture hatchery operations. In particular, seawater pipeline flushing procedures and schedule were implemented and by December 2024, hatcheries were reporting improvements in their larvae survivability. NELHA continues to monitor and improve the operations of the seawater system.



PIPELINE POWER: HOST Park has two active pipeline systems that deliver seawater 24/7 365 days of the year to its tenants. More than 20M gallons are distributed daily. Photo Credit: Tetrachrome

Entrepreneurial Ecosystem

INNOVATION IN OCEAN AND ENERGY TECHNOLOGIES



KEY ACCOMPLISHMENTS

- Secured Nine New HOST Park Tenants
- Support of Big Island Abalone Transition
- HATCH Accelerator and Blue Venture Program

ENTREPRENEURIAL ECOSYSTEM AND INNOVATION IN OCEAN AND ENERGY TECHNOLOGIES

Objective 1: Grow the ecosystem to support innovation at HOST Park

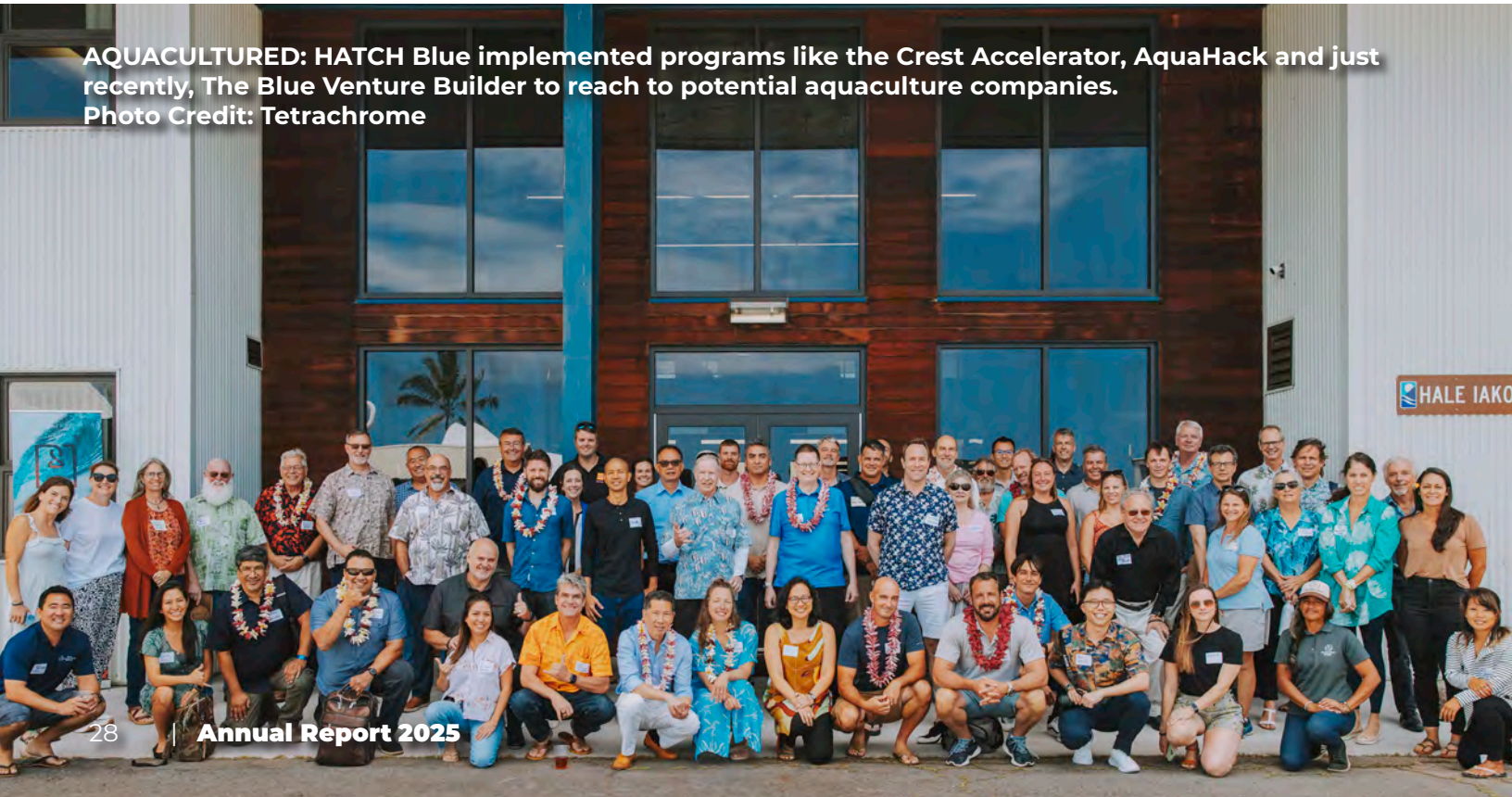
HATCH completed the two CREST accelerator programs in FY2025 for a total of 12 companies. The companies specialized in the areas of sensors, nutrition, blue carbon, hardware, software and supply chain as it relates to aquaculture.

Despite challenging market conditions, the HATCH Fund II closed after receiving a final $1.5 M investment April 2025 for a total for $13.9M. This fund provided seed funds to the CREST accelerator companies.

The Blue Venture Builder Hawaii program continued to support growth for the companies that participated in the ideation program in late 2024. These companies won competition prizes and were awarded grants.

The Ocean Foundry incubator program supported companies such as Okonokai, NeuralX and Namaka Algae by providing space and business services to scale, hire, expand and succeed in obtaining non-dilutive funding.

The Blue Venture Builder and Ocean Foundry are also HATCH programs federally funded by the Economic Development Agency (EDA) as part of a 4-year incubator project.



AQUACULTURED: HATCH Blue implemented programs like the Crest Accelerator, AquaHack and just recently, The Blue Venture Builder to reach to potential aquaculture companies.
Photo Credit: Tetrachrome



MORE BUTTERFISH PLEASE! Kona Butterfish Co. will soon begin cultivating premium-quality Sablefish (Black Cod) using the pristine deep cold seawater of the Kona Coast. This unique process ensures the highest quality product with minimal environmental impact. Photo courtesy of Kona Butterfish Co.

In early summer 2024, NELHA Initiated the update of the existing onshore EIS as well as the Master Plan covering the entire 870-acre HOST Park.

The purpose of this effort is to allow NELHA to grow businesses in alignment with community goals at a location that supports appropriate natural resource utilization and results in economic development including supporting research projects and facilitating the transition from research and development to pilot scale and then to full commercial operation of companies at HOST Park.

NELHA has also initiated efforts to prepare a programmatic EIS for the waters offshore of HOST Park as a location for research, testing and demonstration of innovative conservation, energy, offshore aquaculture or ocean monitoring concepts. Completing an EIS for this research corridor would allow for more rapid, iterative permitting of allowable projects.

The EIS would describe specific activities that could take place in these waters and would provide a path for expedited approval for short-term, small-scale, non-commercial demonstration or research projects for offshore aquaculture, energy, ocean monitoring and conservation activities.



A SMALL WORLD: ' Ōpae'ula - tiny red shrimp found along Hawaii Island's coastline, are often in anchialine pools. Photo Credit: Tetrachrome

Financial Statement FY 2025

NATURAL ENERGY LABORATORY OF HAWAII AUTHORITY

FINANCIAL STATEMENT FISCAL YEAR 2025
(Fiscal Year - July 1 to June 30)

REVENUES	
Land Use Fees	2,458,796.48
Seawater Royalties	25,693.64
Reimbursables	2,382,027.21
Interest Received	67,705.27
Other	418,493.79
Percentage Rent	51,017.05
Subtotal	**5,403,733.44**
EXPENDITURES	
Salaries	1,758,209.20
Operations	3,048,089.21
OHA (Ceeded Lands Transfer)	674,619.50
Subtotal	**5,480,917.91**

FINANCIAL POSITION

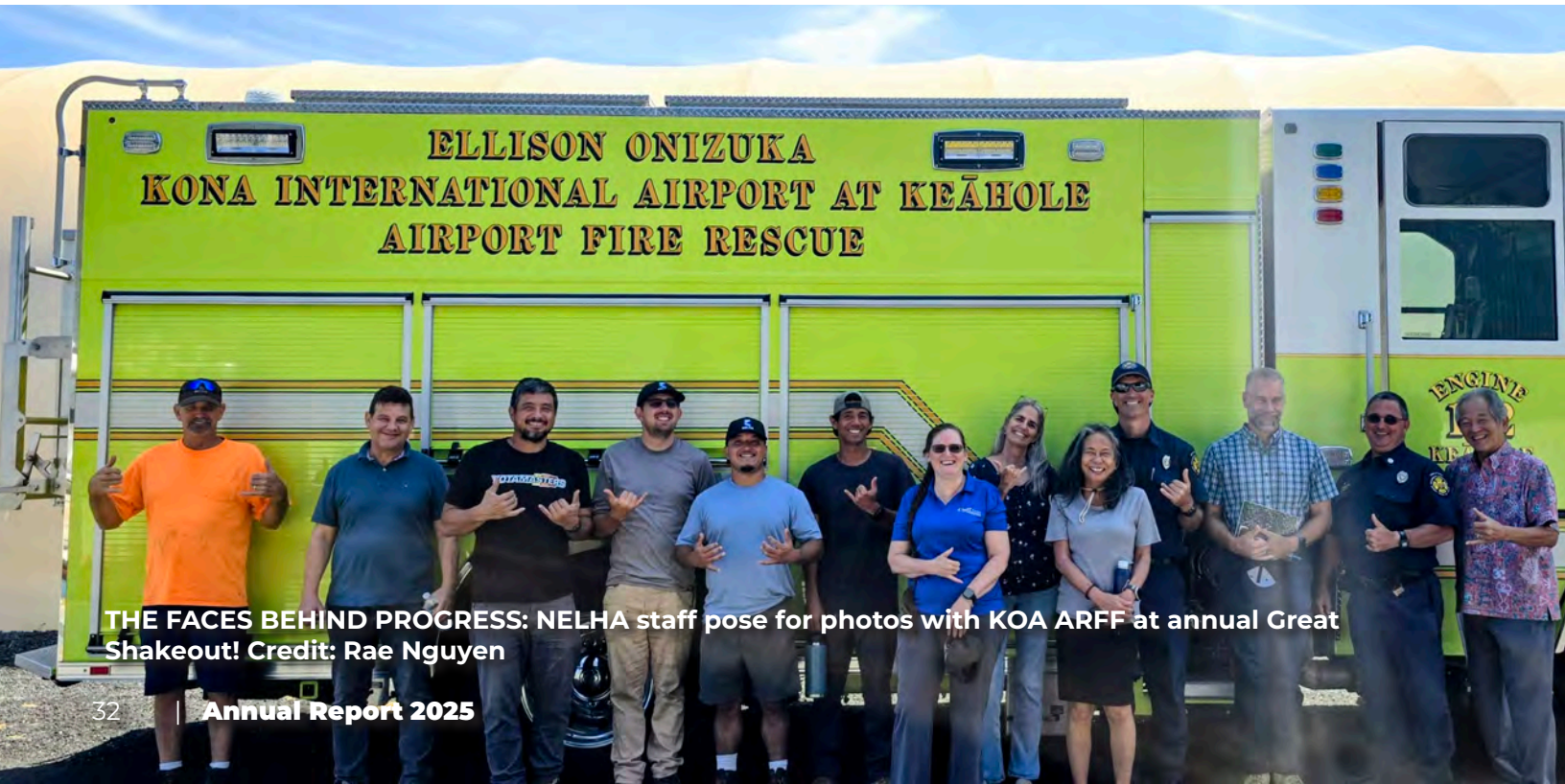
Special Fund Cash Balance (July 1)	
Prior Year Unrequired claims	-
Prior Year Transfers	834,893.03
Special Fund Revenues	5,403,733.44
Subtotal	6,238,626.47
Special Fund Expenditures	4,806,298.41
OHA (Ceeded Lands Transfer)	674,619.50
Encumbrances	310,496.32
Special Fund Cash Balance	**447,212.24**

Note: All data as end of fiscal year (June 30) unless otherwise noted.

NELHA Team

NELHA staff comprises a small crew of 16 employees, each with unique skills and qualifications needed to oversee HOST Park.

Incumbent	Position Title
Bryan Babbitt	Engineer
Chad Debina	General Laborer
Faustine Edge	Administrative Assistant
Jeremy Fukunaga	Groundskeeper and Facilities Maintenance
Dr. Alexander Leonard	Chief Projects Manager
Edward Lizama	Utility Electrician
Pamela Madden	Water Quality Lab Manager
Bryce Matsuoka	Assistant Maintenance Mechanic I
Rae Nguyen	Marketing and Leasing Specialist
Keith Olson	Chief Operations and Science Officer
Pedro Perez	Industrial Electrician
Jennifer Rasmussen	Business Manager
Bryan Runyan	Operations Technician
Riley Saito	Executive Director
Laurence Sombardier	Deputy Director
Kevin Tapley	Industrial Maintenance Mechanic



THE FACES BEHIND PROGRESS: NELHA staff pose for photos with KOA ARFF at annual Great Shakeout! Credit: Rae Nguyen

NELHA Board of Directors

2025

The Natural Energy of Hawaii Authority is to develop and diversify the Hawaii economy by providing resources and facilities for energy and ocean-related research, education, and commercial activities in an environmentally sound and culturally sensitive manner.



Noelani Kalipi
CHAIR
GOV. APPOINTEE
Kalipi Enterprises
FY 2025



Cyd Miyashiro
VICE-CHAIR
Formerly Chair 2024
GOV. APPOINTEE
merican Savings Bank
FY 2025



Gordon Bruce
GOV. APPOINTEE
Cyber Security
Consultant
FY 2025



Alan Hilton
RAC CHAIR
Consultant
FY 2025



John Wiltshire
RAC
FY 2025



Chad Watson
University of Hawaii
FY 2025



errick Nishimot
County of Hawaii
FY 2025



Jaclyn Kaina
Hawaii Technology
evelopment Corporation



ames Tokioka
DBEDT
FY 2025



Ian Hirokawa
DLNR
FY 2025



Neil Sims
TENANT REP.
Ocean Era Inc.
FY 2025



Nate Tsao
TENANT REP.
Jamestown Point
hitney Venture, LLC
FY 2025

1974

Natural Energy Laboratory of Hawaii, operated by the University of Hawaii, was established as a response to the first oil crisis.

1979

Mini-OTEC was anchored offshore of Keahole Point, demonstrating the world's first production of net electrical power via closed-cycle OTEC.

1980

Laboratory facilities and its first pipeline to draw deep seawater from 2,000 ft. and surface seawater from 45 ft. depths were completed.

1981

Shore-based OTEC research began with a project testing biofouling and corrosion countermeasures for the closed cycle OTEC process.

1984

Legislation authorized commercial activities, allowing the Laboratory to host new business ventures.

1985

Legislature authorizes NELH to assume management responsibility of the Puna Geothermal Facility to NELHA. Facility consists of a 3 mW electric power plant and the Noi'i O Puna Research Center.

1986

HOST Park was created on 500+ acres and operated by HTDC. US DOE and HOST Park combined resources to install 40" deep and 28" surface seawater system at Keahole Point. Lab building AC system converted to deep seawater cooling. Legislature appropriates funds for 18" deep seawater pipeline.

1987

Heat and Mass Transfer Scoping Test Apparatus (HMTSTA) open-cycle OTEC test tower constructed and operated by Pacific International Center for High Technology Research (PICHTR).

Appendix

History of Major Events

1974 - 2002

1989

Puna Geothermal Facility and HGP-A well shut down. The Aluminum Company of anada (ALCAN) develops program at the Laboratory for testing "roll bonded" luminum heat exchangers.

1990

NELH, operated by UH and HOST Park, operated by HTDC merge to become the Natural Energy Laboratory of Hawaii Authority (NELHA).

1992

210 kW open-cycle OTEC Net Power Producing Experiment (NPPE) constructed at NELHA and operated by PICHTR.

1993

State Legislature passes Act 252 to better define the role of NELHA.

1994

Micro-tunneling begins to construct two 66" diameter tunnels under the shoreline and offshore reef as a pipeline protection crossing in preparation for NELHA's new 55" warm and cold seawater pipelines.

1995

CEROS transferred from HTDC to NELHA.

1998

NPPE open-cycle OTEC power plant decommissioned.

2000

Construction begins for 55" new offshore intake pipelines and pump station. Planning and design process started for new Hawaii Gateway Distributed Energy Center.

2002

Successful deployment of 55" pipeline offshore and construction of initial phase of onshore pump station using specially designed fiberglass reinforced intake cannisters. First deep seawater desalination project begins for bottled drinking water.

2003

NELHA tenant count reaches 34. Nonprofit "Friends of NELHA" formed to assume basic public relations and outreach functions for NELHA.

2004

Construction of Hawaii Gateway Distributed Energy Center completed.

2005

55" warm and cold seawater pump station and distribution pipelines completed.

2006

Foreign Trade Zone status granted by US Dept. of Commerce. Keahole Solar Power LLC begins construction of solar thermal research and demonstration facility. There are 5 leases to desalinize deep seawater to produce boutique drinking water.

2007

Cellana, in partnership with Royal Dutch Shell, begins construction of a 6-acre micro-algae to biofuels research center.

2011

Makai Ocean Engineering completes construction of corrosion lab and heat exchanger test tower to investigate the use of aluminum alloys for OTEC.

2012

UHERO's economic impact study revealed that HOST Park contributes significantly to the local economy, generating nearly $90 million annually and supporting 600 jobs. The Master Plan and Strategic Plan were updated, and a program audit was completed. Additionally, HOST Park secured $3.5 million in federal grants for renovations and $1.8 million in CIP funds for pipeline repairs.

2013

HOST Park economic impact surges by 40% since 2010. Received $2.3M in CIP funds for seawater system upgrades and interconnection of seawater between two systems. Completed deep seawater pipeline repair ($5M) to extend life of pipeline by 15 years. Received $10M for new road construction. Over $30M in private/ public projects underway.

Appendix

History of Major Events

2003 - 2017

2014

NELHA secured $2.5 million in CIP funding for a new exploratory water well. The organization strengthened its relationships with national laboratories, developed a strategic vision paper, and received the 2014 DBEDT "Team of the Year" award. Key partnerships were forged with Sandia, Lawrence Berkeley, Pacific Northwest, and National Renewable Energy Laboratories. Additionally, a MOU was signed with the County of Hawaii and HELCO to establish an energy storage system test bed. NELHA also revamped its website.

2015

NELHA begins construction of numerous projects including office incubator, 28-inch cross connector surface seawater pipeline to connect the north and south seawater systems and buildout of the SCADA system to monitor real-time use of seawater and electrical consumption.

2016

NELHA transformed the main administrative uilding into a 14,000 sq ft blue technology nd advanced energy ncubator, housing 17 offices. The NELHA Aquatic Species Health Management Program was significantly revised, including biosecurity policies and guidelines. An RFI was released for a prime site in the Ocean CenterPiece development area, nd a national energy storage conference was organized. Additionally, a etailed archeological urvey was conducted on the upper half of HOST Park.

2017

NELHA initiated significant projects to develop the 80-acre Ocean Center Piece, including a $10 million oad construction projec and exploration for a new freshwater source. The concept for a Hawaii Center for Aquaculture Sustainability was formulated, and a statewide aquaculture summit was hosted. The renovation of Hale Kaa was completed, marking the end of a five-year campus-wide renovation project. A lease was signed with Hawaii Natural Energy Institute to develop a hydrogen production facility. NELHA received the 2017 Mahalo Award from Hawaii Community College and the 2017 Community Service Award from ThinkTech Hawaii.

Appendix

History of Major Events

2018 - 2025

2018

NELHA secured a $1.928M DOE grant for a solar desalination project and $4.9M in CIP funds for seawater system upgrades. The Aquaculture Accelerator project was launched in partnership with HSDC, UH, and UH Ventures to boost Hawaii's global aquaculture presence. The second national energy storage conference was held, and a $142,500 grant was received to develop a 10-year renewable energy plan for the seawater system and microgrids. All studies and approvals for an exploratory water well were completed, pending a final permit.

2019

NELHA, in partnership with UH and HTDC, selected HATCH to operate the Hawaii aquaculture accelerator and manage the $8.4M investment fund. The first cohort of 13 companies was completed. A $275,000 EDA grant was received for this project. NELHA was selected by the Korean Institute of Energy Technology Evaluation and Planning for a $1.73M USD grant for microgrid development at the 55" pumpstation. A $1.85M agreement was signed with Encored to construct the microgrid. The SCADA system was expanded to monitor 85% of seawater flows. An additional 178kW of solar panels and a 100kW/400kWh energy storage system were installed. Trevi Systems was selected as the main contractor for the solar desalination project. A tenant satisfaction survey revealed high levels of satisfaction with NELHA services. Damage assessments were completed for buildings destroyed by the Kilauea eruption, and claims were submitted to FEMA and insurance companies for $7.6M. NELHA also resumed its semi-annual newsletter.

2020

NELHA successfully navigated the COVID-19 lockdown, maintaining strong tenant relations and implementing strict safety protocols. No staff infections were reported. FEMA approved a $3.447M grant for Puna building damage, and an additional $3M was secured from insurance companies. These funds will be used to expand the fully occupied research campus by engaging a planning and design firm.

2021

HOST Park has significantly improved energy efficiency, with a 4.43% increase in seawater system efficiency and a 15% overall boost from automation. A 10-year renewable energy and microgrid plan is underway, and consultants are working on decommissioning old pipelines. The microgrid project is nearing completion. The aquaculture accelerator program has secured a $3.1M grant for a four-year extension. The 9-acre Innovation Village expansion is in progress. HOST Park aims to lead Hawaii's ocean economy in energy, food security, technology, and conservation.

2022

NELHA successfully pumped over eight billion gallons of seawater during the pandemic, supporting over 50 businesses. Ten new clients joined HOST Park, with nearly 100% occupancy at times, accelerating the need for new research space. A new business leased the Gateway Center. $2.0M in CIP funding was received for EIS updates and offshore freshwater seep exploration. NELHA's organizational structure was overhauled to improve efficiency and effectiveness.

2023

NELHA completed the initial phase of PV and battery system testing or the 55" Pump Station Microgrid Project. The aquaculture accelerator .0 cohort was launched. A $3.4M CIP funding quest was submitted for awater system upgrades nd an EIS for an offshore research corridor. The old Destiny Deep Seawater LLC building nd improvements were purchased for $4.75M. A marine CSEM study was initiated with UH to identify submarine freshwater reservoirs. NELHA also launched a "pathways" workforce development program with local high schools.

2024

The 55" Pump Station PV/ ESS Microgrid is completed, featuring 500kW solar ground-mounted PV array and 750 kWh of energy storage. NELHA launches hostpark.io detailing client success stories, unique resources and opportunities for investment, research and partnership. NELHA consults with an advisory hui to help guide through cultural issues. NELHA retrieves 200ft.-long abandoned pipe found floating in Keahole Point. Start of a three-year process to update the HOST Park and NELHA Master Plan. When complete, these documents will better enable NELHA to fulfill its mission. NELHA celebrates 50 years and hosts an Open House celebration with more than 1,700 in attendance.

2025

Welcomed new executive director. Implemented seawater flushing procedures and schedule. Since start of school tour program back in Nov. 2023, HOST Park has welcomed more than 1,600 students. Engaged with lineal descendants to bridge knowledge gaps and educate staff and clients. Secured 9 additional tenants including Captura Corp., Kona Sablefish Co. and Sea Dragon Energy. Connected with DOT Airports KOA to build egress road and to cultivate partnerships including KOA ARFF. HATCH Accelerator and Blue Venture Program (supported by Dept. of Commerce EDA) raised $9M follow on fund and ran two accelerator cohorts as well as ideation workshop with 50 Hawaii participants to develop Hawaii entrepreneurship in technologies that benefit aquaculture.


Natural Energy Laboratory of
Hawaii Authority
HOST PARK
hostpark.io | nelha.hawaii.gov