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Environment Hawai'i
*a monthly newsletter*

## *A Long Talk*

The Department of Land and Natural Resources is happy that the Sand Island Business Association developed what is now the agency's cash cow: the Sand Island Industrial Park.

But the association's decades-long delay in dedicating key pieces of infrastructure — and the untold millions of dollars upgrades to city standards are likely to cost — has the department and the Board of Land and Natural Resources worried.

In this month's extensive Board Talk column, we discuss the recent amendments to SIBA's lease to address the the board's concerns.

We also provide updates on the Kane'ohe Yacht Club's efforts to secure a lease for the land beneath its piers and the Sierra Club's pursuit of a contested case hearing on East Maui water permits. And we report on violation cases involving damages to historic sites in North Kona and an overbuilt emergency revetment in Punalu'u, O'ahu.

## IN THIS ISSUE



BOARD TALK

# Land Board Seeks Multimillion Dollar Bond For Undedicated Infrastructure at Sand Island

Is the state Department of Land and Natural Resources going to get stuck with having to upgrade or maintain dilapidated sewage and drainage systems after the Sand Island Business Association's lease ends?

In July 1992, the DLNR issued a 55-year lease to the association (or SIBA), which then developed the infrastructure necessary to turn the state's 70 acres of reclaimed, undeveloped land in South O'ahu into the 112-lot Sand Island Industrial Park. The park — where tenants include waste haulers, contractors, auto recyclers, plumbers, painters, and more — is now the single largest source of revenue to the DLNR's Special Land and Development Fund, bringing in $9.3 million in rent this year. Next summer, SIBA's annual rent is scheduled to increase to about $11.4 million.

Normally, the infrastructure — including roads; water, power, and sewer lines; the drainage system — would be dedicated to the city or appropriate utility after the subdivision was completed. In SIBA's case, that would have been in 1999.

That didn't happen.

While the lease requires SIBA to dedicate to the City and County of Honolulu various infrastructure components, it does not specify when that's supposed to happen.

The water lines were dedicated in 2018, but the roads and sewer and drainage systems remain under SIBA's control.

At the August 13 meeting of the Board of Land and Natural Resources, SIBA repre-

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PHOTO: DLNR

Sand Island Industrial Park in red.

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## NEW AND NOTEWORTHY

**Honokohau Headache:** In 2020, *Environment Hawai'i* detailed in its August and September cover stories the strife surrounding the auction of a 10-year lease to operate the boat storage yard at Honokohau small boat harbor in West Hawai'i.

Until recently, the two co-owners of Pacific Marine Partners, which had won the lease, had been in court-ordered arbitration over their respective interests in the company.

Jason Ho'opai had claimed his company, International and Pacific Enterprises, owned 95 percent and Jonas Ikaika Solliday owned just 5 percent. Solliday contended that PMP's operating agreement split their ownership interest 50-50.

On August 29, the 3rd Circuit Court approved the arbitrator's findings of fact and conclusion that Solliday was correct.

What would seem like a victory for Solliday has been anything but.

According to motions seeking injunctive relief, a temporary retraining order and preliminary injunction, and $2.2 million in damages filed by PMP and Solliday late last month, Ho'opai effectively abandoned PMP after the arbitrator first issued his decision on April 7. Ho'opai also began operating a competing boat storage business at Keauhou.

In defiance of the arbitrator's order, Ho'opai failed to immediately give Solliday access to PMP accounts and business records, Solliday's attorneys claim.

"[F]ollowing receipt of the Arbitrator's decision, Ho'opai abruptly disengaged from its day-to-day PMP responsibilities including from all customer invoicing, inquiries, and bookkeeping, doing so despite not having provided Solliday with access to PMP accounts, important customer information, and other important business records," Solliday's attorneys state in one of their filings.

"As the result of IPE/Hoopai's actions, PMP has directly suffered damages in the form of lost business opportunity, lost rental income, loss of good will, the expense of replacing company equipment, and the cost of reproducing missing financial data and records that IPE/Hoopai has refused to provide," they write.

A hearing on the TRO and preliminary injunction has been scheduled for October 13.

**Staph Alert:** For some time, researchers have been aware of the relatively high incidence of methicillin-resistant *Staphylococcus aureus* (MRSA) infections in Hawai'i, as compared to elsewhere in the nation. A study just published in the journal *Antibiotics* takes a deeper look at just how prevalent MRSA bacteria are in the coastal waters, estuaries, and sands that are popular among bathers on the Big Island.

As the authors – including lead author Tyler J. Gerken, who did his undergraduate work at the University of Hawai'i-Hilo – write, "We found *S. aureus* in coastal beach and river waters, anchialine pools, and sand at locations with limited human activity on the island of Hawai'i."

The authors looked for the presence of not just the MRSA strain of staph, but also the methicillin-susceptible strain (MSSA), which is also a health hazard: MRSA infections have a mortality rate of around 14 deaths per 100,000 hospitalizations in the United States, while the MSSA-related mortality is 11 per 100,000.

Samples were taken from 36 stations in Hilo, Kohala, Kona, and Puna and were characterized using whole-genome sequencing. Of the 361 samples, 20 were positive for MSSA (5.5 percent), while 8 were positive for MRSA.

The study was conducted in the second half of 2020, when tourist activity was severely reduced in the state because of the COVID-19 pandemic, the authors note. "Consequently, this study may underrepresent the full extent of *S. aureus* contamination in coastal and aquatic Hawaiian environments."

Their conclusion: Big Island beaches are contaminated with both strains of staph, with the MRSA a strain that is likely circulating in the community. The beaches of the island "are a potential health risk for both MRSA and MSSA infections in humans."

### *Quote of the Month*

*"For better or worse, we're kind of stuck together. … If they pull the piers out, we both lose."*

***— Land Board member Chris Yuen on Kane'ohe Yacht Club***

**Lopped Off:** An editing error led to the loss of the last few words of our June 2021 cover story, "Latest Red Hill Spill Complicates Contested Case on Operating Permit," as well as the byline.

The last sentence should have read: Parties were set to submit their post-hearing briefs and proposed findings of fact and conclusions of law by June 14. The byline: Teresa Dawson

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# Two Important New Acts Address Statute of Limitations, Ag CPRs

Two developments lie behind the 2021 Legislature's passage of acts relating to land use laws in Hawai'i:

• A state Supreme Court ruling that interpreted the applicability of the statute of limitations for grievances filed over a Land Use Commission decision; and

• The process of using condominium property regimes to circumvent county subdivision laws governing the state Agricultural District.

The first of these – the Supreme Court ruling – grew out of the much-disputed, much litigated – and still moribund – Villages of 'Aina Le'a development in the Big Island district of South Kohala, lying between the town of Waikoloa to the east and the Mauna Lani resort to the west.

As stated in the findings section of **House Bill 357 (Act 16),** "the explicit creation of a statute of limitations applicable to regulatory takings actions against the state is warranted in light of the Hawai'i Supreme Court's decision in *DW Aina Le'a Development, LLC, v. State of Hawai'i Land Use Commission, et al.*... Setting this limitation by statute will bring certainty and predictability to the time within which a plaintiff shall file this type of claim against the state or be barred from pursuing the claim."

For all the years of trouble that the lack of an explicit time limit caused in the 'Aina Le'a case, the legislative solution is startlingly brief. Just one sentence is added to the HRS Chapter 657 addressing time limits for filing claims against the state alleging a regulatory taking. "All actions for a regulatory taking against the state, including a claim brought under Article I, Section 20, of the State Constitution, shall be commenced within two years after the cause of action accrued, and not after."

Attorney General Claire Connors and deputy AG David Day submitted testimony supporting the change. While noting that monetary claims against the state are subject to a two-year statute of limitations, the state Supreme Court, in the 'Aina Le'a ruling, found that a six-year statute of limitations for regulatory taking claims was supported by a six-year "catch-all" statute of limitations in the state Constitution.

"Frequently, it is not immediately obvious to the government that a regulation may have serious adverse effects upon private property owners," they testified. "Hawai'i has unique legal structures for land-use and permitting, including Conservation District permitting, Coastal Zone Management, shoreline setbacks, historic preservation laws, the Water Code, and a robust trust doctrine, all of which are intended to protect the 'aina and its resources and natural beauty. Because regulations within these legal structures could potentially limit the development of property, the state could be subject to a variety of regulatory-taking claims."

The 'Aina Le'a construction site in 2010.

They went on to say that the proposed legislation would help the state address the COVID-19 pandemic. "Laws and regulations that limit business activity or that limit the rights of landlords for the benefit of public health could potentially be subject to suit. Because Hawai'i case law on regulatory-taking claims is very limited, the likelihood of the state being found liable for a regulatory-taking claim is difficult to predict, given the myriad different factual situations. This in turn makes the state's potential financial exposure very high."

As the bill made its way through the legislative hearing process, the executive departments of Transportation and Land and Natural Resources added their support in testimony. No testimony in opposition was submitted.

(For background on the long history of 'Aina Le'a litigation, see write-ups in past issues of *Environment Hawai'i,* including, most recently our January 2021 article, "High Court Favors 'Aina Le'a on Question of Statute of Limitations.")

The background to passage of **House Bill 247 (Act 77)** can be found in a report submitted to the Legislature by the Office of Planning in advance of the start of the 2021 legislative session. That report, developed in response to a previous legislative request (Act 278 of the 2019 Legislature), looked into subdivisions and condominium property regimes (CPRs) on land in the state Agricultural District on the island of O'ahu.

As noted in the report, development of an agricultural subdivision in conformity with the ordinances of the City and County of Honolulu can be expensive, requiring roads and other infrastructure. To get around this, owners of agricultural land have devised several alternative ownership structures. A state agency, the Department of Commerce and Consumer Affairs, gives approval to CPRs, with the county having no opportunity to review them and little ability to enforce laws restricting uses on Ag lands. "Buyers mistakenly believe they have bought a conforming subdivided lot and can build a farm dwelling," the report states. "There is no prior city review and disclosure of the adequacy of infrastructure and utility systems and environmental constraints."

To address this, the OP report recommended the Legislature require the DCCA to obtain county review of all agricultural CPRs to determine "availability of supportive infrastructure, the potential impact on governmental resources, and other requirements of county ordinances and rules."

Additionally, state law had allowed buildings in the state Ag District to be exempt from county building codes. This, the report notes, made it virtually impossible for county inspectors "to investigate allegations of violations and misuse of unpermitted agricultural buildings and structures which are sometimes illegally transformed into residential uses." In

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response to early findings of the OP, the Legislature in 2020 passed a measure (Act 60) that grants county agencies the right to enter property to investigate allegations of violations of state and county land use laws. Another bill introduced in 2020 that would have banned residential use of agricultural outbuildings was not passed, owing to the foreshortened session – the result of the COVID-19 pandemic.

The OP report noted that legal vehicles to get around the county rules and ordinances concerning subdivisions on agricultural land have proliferated. These include establishment of LLCs and cooperatives that sell shares allowing owners to occupy portions of larger ag lots. Since these were not called out as part of the charge of the OP in developing the report, the OP made no recommendations as to how these might be addressed.

Act 77 includes the language of the bill from 2020, making it illegal to occupy any agricultural outbuildings erected on leased ag land and giving counties authority to enforce this. It also requires county review of any agricultural CPR proposal involving more than five units as to the adequacy of infrastructure, impact on government resources, "sensitive environmental resources, and any other requirements pursuant to county ordinances and rules." The new law took effect July 1.

Providing supportive testimony for the bill were the state Real Estate Commission, the Office of Planning, the chairperson of the Board of Agriculture, the Honolulu Department of Planning and Permitting, Ulupono Initiative, the Hawai'i Cattlemen's Council, the Hawai'i Farm Bureau, and the Kaua'i Kunana Dairy.

A petition, organized through Change.org, was submitted to the Legislature in opposition. Among the 370 signatories to the petition were people from Australia to Argentina, Missouri to Miami, Austria, Netherlands, and Denmark. Among other things, the petition alleges that the legislation would eliminate affordable housing, create an "unfunded mandate" for the counties, damage local economies, and was based on an incorrect understanding of the CPR process.

Several other individuals submitted testimony, about half in support and half opposed. ***– Patricia Tummons***

# Climate Change, Resource Protection Addressed in 2021 Legislative Actions

The 2021 Legislature may not be remembered for actions that will have sweeping, dramatic impact on Hawai'i's environment. Still and all, a number of bills that will push the state closer to a cleaner, sustainable future did manage to cross the finish line and be signed into law.

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## Climate Change And Green Energy

Three years ago, the state Climate Change Mitigation and Adaptation Commission recommended that the Legislature require properties offered for sale in areas susceptible to sea level rise disclose this fact to potential buyers. Bills that would have accomplished this failed in 2019 and 2020, but this year, **Senate Bill 474** was finally approved and became **Act 179** when signed by Gov. David Ige on July 7.

State law (HRS Section 508D-15) already requires sellers disclose to buyers if the property offered for sale is within a flood zone, near a military or public airport, or in a designated tsunami inundation area. The new law adds to these four factors a fifth: whether the property lies "within the sea level rise exposure area as designated" by the state climate change commission.

The law will take effect May 1, 2022.

Three bills – **House Bill 1318**, **HB 1149**, and **HB 243** – effect a reorganization of government agencies that is intended to consolidate responsibility for overseeing efforts to respond to the challenges of climate change. HB 1318 shifts the Office of Environmental Quality Control from the administrative lap of the Department of Health over to the state Office of Planning. "[I]mproved integration of land use planning and environmental policy decision-making will enhance state government agencies' ability to implement climate change adaptation measures to address sea level rise and more frequent and intense storm events, increase clean energy production, and reduce greenhouse gas emissions," the legislation states.

HB 1149 places the state Land Use Commission under the administrative umbrella of the Office of Planning, which itself is renamed the Office of Planning and Sustainable Development. HB 243 requires the office to "identify existing and planned facilities that are vulnerable to seas level rise, flooding impacts, and natural hazards; assess options to mitigate the impacts of sea level rise to those facilities; and submit annual reports to the governor, Legislature, and Hawai'i Climate Change Mitigation and Adaptation Commission regarding vulnerability and mitigation assessments for state facilities and progress in implementing sea level rise and disaster resiliency considerations."

It also amends the state Planning Act, adding "sustainable development, climate change adaptation, and sea level rise adaptation" to the list of objectives in plans for state facilities.

**Senate Bill 932** opens up the state's Green Energy Market Securitization (GEMS) fund to allow state agencies to borrow from it to "finance their purchase option under existing energy performance contracts and power purchase agreements … with the option to utilize savings to finance the installation of electric vehicle charging systems and lease or purchase electric vehicles."

In addition, it replaces the existing building energy efficiency revolving loan fund with a "clean energy and energy efficiency revolving loan fund," intended to "finance a broad range of clean energy technologies," beyond those specified in the earlier fund.

The Hawai'i Green Infrastructure Authority is charged with administering both the GEMS fund and the new revolving fund.

**House Bill 1333** acknowledges the environmental problems that are anticipated to arise when clean energy technology reaches the end of its life and tasks the Hawai'i Natural Energy Institute, at the University of Hawai'i, with determining the best practices for disposal, recycling, or secondary use of the state's clean energy products, and assessing the scope of

***Continued on next page***

# What Weighs on Legislators' Minds Is Frequently Revealed in Resolutions

Legislative resolutions don't carry the weight of law, but they do provide clues as to what statutory changes might be given serious consideration in years to come.

This year, the resolution that received the most publicity was probably Senate Concurrent Resolution 44, Senate draft 1, House draft 1, "Declaring a climate emergency and requesting statewide collaboration toward an immediate just transition and emergency mobilization effort to restore a safe climate."

As the resolution states, a "climate emergency" isn't the same as a state of emergency declared by appropriate authorities. Still, there is value in the Legislature's acknowledgement "that an existential climate emergency threatens humanity and the natural world" and its request that "entities statewide … pursue … climate mitigation and adaptation efforts and mobilize at the necessary scale and speed."

Other resolutions lacked the sweep of this one, but nonetheless merit attention. Here's our take on a few of them.

**Sea Level Rise:** Senate Resolution 127, Senate draft 1, calls on the Office of Planning and Sustainable Development to identify state facilities and infrastructure vulnerable to flooding and other effects of sea level rise. In addition, it is to assess what can be done to mitigate the likely impacts, "including flood-proofing and relocating the facilities and infrastructure."

In doing so, the office should give priority to "nature-based disaster resilience, climate change adaptation solutions, and actions that enhance disaster resilience and climate change adaptation efforts," while also ensuring that the recommended actions "protect the state's most vulnerable populations."

A report to the Legislature is expected by the start of the 2023 session.

**Coffee Pests:** How did the coffee berry borer, a tiny beetle, become established in Hawai'i, threatening the state's second-most valuable export crop? Inquiring legislators want to know.

PHOTO: HAWAI'I DEPARTMENT OF AGRICULTURE

Coffee leaf rust.

Senate Concurrent Resolution 258/ Senate Resolution 217 notes that the borer was first detected in Hawai'i in

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products and materials (i.e., solar panels, batteries, and glass) that will need to be disposed of or recycled.

The study should also determine whether a disposal or recycling fee should be charged.

An interim report is due before the start of next year's legislative session, while a final report is to be delivered before the 2023 session.

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## Aquatic Resources

Several acts relate to aquatic resources.

**House Bill 1016** relates to commercial marine fishing licenses. At present, anyone who sells even a part of their catch needs to obtain a commercial fishing license. Also, anyone who works on board a commercial fishing vessel must obtain a commercial license. The existing commercial marine license laws, the bill states in its findings section, "can be unnecessarily burdensome on boat-based fishers" while placing "logistical and financial burdens on vessel captains … and can lead to confusion regarding who is responsible for submitting commercial catch reports."

To address this, the bill does away with the requirement that all crew members have their own commercial licenses.

The financial impact to the state Department of Land and Natural Resources' Division of Aquatic Resources will be negligible with respect to small-scale fishers. But when it comes to the 140 or so longline vessels, the impact is much greater. Each vessel has multiple crew members, so the sale of just one license per vessel instead of as many as 10 per year could represent a substantial loss of license fees.

The question of just how the division will deal with this shift in fee structure was put to Dan Dennison, senior communications officer for the DLNR.

The division, he replied plans to pursue rule changes that will allow it to charge longline vessels a higher fee.

**HB 1018** gives the DLNR authority to adopt rules requiring anyone wishing to fish with lay nets to first obtain a permit. As stated in the findings section of the new law, "despite detailed lay net rules implemented by the department … the illegal and irresponsible use of lay nets continues with adverse impacts to both fishery resources and protected species."

**HB 553** criminalizes the intentional capture and killing of sharks in state waters.

**HB 1019** establishes the Ocean Stewardship Special Fund. Deposits into the fund are to be made from user fees associated with commercial ocean tourism operations, initially set at $1 per passenger; compensation for damages to reefs or other marine resources; and fines collected for violations of rules relating to marine resources, among other revenue sources. Money from the fund is to go to support the conservation, restoration and enhancement of marine resources. The act takes effect upon its approval (June 8), but the collection of the passenger fees is not to start until January 1, 2024.

Finally, there is **Senate Bill 1313**. This requires the Department of Land and Natural Resources to restock the Wahiawa reservoir with northern largemouth bass and/or butterfly peacock bass by January 1, 2023. — ***P.T.***

*Resolution from Page 5*

2010 in the coffee-growing districts of Kona and Ka'u. Since then, it has been detected on O'ahu, Maui, Kaua'i, and Lana'i. In Kona, the resolution states, "over 90 percent of coffee farms in the … region are affected by the coffee berry borer," and every coffee farm in the region has seen yields – and crop prices – drastically reduced.

Legislators are just as curious about how another coffee pest, the coffee leaf rust, was able to enter the state a decade later, spreading since then from Holualoa, in the heart of the Kona coffee region, to Maui and Lana'i.

"It is imperative," the resolution says, "that this body [the Legislature] be provided with a clear understanding of how they [these two pests] were introduced so that the costs of mitigation can be fairly shared among the responsible parties." In an effort to arrive at that understanding, the resolution urges the state Department of Agriculture to pinpoint when and how the beetle and the rust were introduced "and determine what role the importation of green coffee … played in the introduction of these pests, and what risks the continued importation of green coffee poses to the ongoing viability of Hawai'i's coffee industry."

Phyllis Shimabukuro-Geiser, chairperson of the Board of Agriculture, said her department supported the intent of the resolution. However, she said, the DOA "lacks adequate staffing, training, and expertise for conducting the comprehensive investigations necessary to accurately determine the origin of these two invasive species.

"Further, as this represents a likely foreign pathway, this falls within the expertise and broader jurisdiction of the U.S. Department of Agriculture." When the borer was first detected, the DOA asked the USDA Animal Plant Health Inspection Service to help it track down the origins of the coffee bean borer in the state. "While that investigation was inconclusive," she said in her written testimony, "it was not linked to the importation of green coffee from foreign sources." Her department has asked APHIS for assistance with similar research as to the introduction of the coffee leaf rust.

Testimony in support came from a number of coffee farmers as well as the Hawai'i Coffee Association and the Kona Coffee Farmers Association.

In addition to reporting on how the pests got here, the DOA is tasked with determining, among other things:

- What existing measures were intended to prevent their introduction;
- What new monitoring and quarantine strategies might allow for early detection;
- What outreach strategies should be developed to inform coffee farmers of these new measures; and
- The extent to which the new measures could "protect those living in Hawai'i's coffee growing regions from the cumulative impacts of ongoing exposure to pesticides."

The concurrent resolution crossed over to the House, where it received a favorable hearing from the Committee on Agriculture. It was referred then to the House Finance Committee, which failed to hold a hearing on the measure. But certified copies of Senate Resolution 217 were sent on June 21 to the chairperson of the Board of Agriculture and the dean of the University of Hawai'i College of Tropical Agriculture and Human Resources.

**Honokohau Management:** As readers of *Environment Hawai'i* are aware, one of the more troubled assets of the Department of Land and Natural Resources' Division of Boating and Ocean Recreation is Honokohau Harbor. The facility is the largest recreational harbor on the Big Island, with more than 260 moorings in the marina, dozens of services and shops, a restaurant, and more than 300 acres of vacant state-owned land.

In 2012, an Atlanta-based developer proposed a large hotel-commercial-marina project for the vacant land and an adjoining large parcel owned by the state Department of Hawaiian Home Lands. After that fell through, the DLNR has struggled to come up with new proposals.

Three years ago, Senate Concurrent Resolution 227/Senate Resolution 187 notes, DOBOR established an informal working group composed of harbor users, recreational boaters, commercial operators, "key state legislators," and government agency representatives, "to discuss potential uses and revenue generating strategies for vacant lands" at Honokohau. This group "has greatly assisted" DOBOR, the resolution goes on to say, and DOBOR "is requested to formalize the Honokohau Small Boat Harbor Working Group to function as the management authority" for the harbor.

In addition, it is "encouraged" to comply with Chapter 92, Hawai'i Revised Statutes, the state's Sunshine Law.

Suzanne Case, chairperson of the Board of Land and Natural Resources and head of the DLNR, testified in opposition. She noted that formalizing the working group "would subject it to the requirements of Chapter 92," the so-called Sunshine Law. The law's meeting requirements "may inhibit the Working Group's effectiveness" and could result in "difficulties in meeting the quorum, bi-monthly meeting requirements, notice, and reporting requirements," she added.

She said the department had serious concerns with the proposed group's authority to "develop marine management rules for the department to adopt, undertake duties of harbor management, and review departmental contracts relating to the Honokohau Small Boat Harbor" – tasks that may only be conducted by state employees.

"[I]f the Legislature intends to transition the State out of managing the Honokohau Small Boat Harbor, the Department recommends that the Legislature instead allow DOBOR to conduct a pilot program for (public-private partnership) management of the Honokohau Small Boat Harbor," she argued.

Testimony from the union representing state workers, United Public Workers, Local 646, also stated that should the working group take over management, "we hope … that they take into account the role that our members play." UPW members provide custodial services at the harbor.

The resolutions were sponsored by Sen. Dru Kanuha, whose district includes the harbor, and Sen. Michelle Kidani, and cosponsored by Sens. Mike Gabbard, Lorraine Inouye, and Glenn Wakai.

The only committee to hear the resolution, Inouye's Committee on Water and Land, voted it down. ***– P.T.***

*Board from Page 1*

sentatives explained that the organization has maintained control over the roads for security reasons. It also claimed that the city has said it doesn't want the sewer and drainage systems without the roads.

SIBA executive director Milton Holt explained that at night, it closes the cattle gate at one of the two roads into the park and places a security guard at the other.

"If we didn't close at night, it would be occupied by homeless. … Tenants have them on film scaling the fence and entering their property," said SIBA's treasurer, Sonny Borges.

"That's why we haven't dedicated the roads. It would open it to the public and there would be problems," Holt added. (Because it's chosen to retain the roads and sewer and drainage systems — and, therefore, has to maintain them at its own cost — SIBA recently argued unsuccessfully to the City Council that it shouldn't have to pay as much in property taxes as those who receive the full suite of city services.)

Recognizing SIBA's security needs, the DLNR's Land Division recommended amending the lease to require the dedication to the city no later than five years before the lease expires. The division also recommended that, in the meantime, SIBA secure a bond to cover the estimated costs to upgrade the roads and sewer and drainage systems to city standards.

The lease is set to expire on June 30, 2047, but due to legislation passed earlier this year, the association could seek a 40-year extension.

Kevin Moore of the DLNR's Land Division noted that in 2019, SIBA had an engineering study prepared for the roads. It estimated that they needed nearly $2.5 million worth of repairs.

Based on that, the division initially proposed requiring SIBA to post a bond totaling $2,733,500 (the cost of repairs plus a 10 percent contingency). However, because additional studies were necessary to determine the potential costs to upgrade the sewer and drainage systems, it recommended at the August 13 meeting that the dollar amount of the bond be left blank until those studies were done.

"My concern is not dedicating the improvements. The lease will run out. … It might be 50 years out. Sooner or later, the state will own the infrastructure. If it's dedicated, the city will be responsible for maintaining it and keeping it working. I'm more concerned about sewers and drainage," said Land Board member and former Hawai'i County planning director Chris Yuen.

Borges tried to assure Yuen that there have been no problems with the sewer or drainage systems. "Nobody complained about the sewer. … Nothing has gone wrong. We fixed the roads ourselves," Borges said.

"Has anyone inquired about dedicating the drainage system without the roads?" Yuen asked. Borges replied that they hadn't.

Yuen said he sympathized with SIBA's security issues. "The government is not taking care of the situation," he said. However, he added, "I am concerned with the state some day having a sewer line that is going to cost oodles of money to replace."

Yuen asked if SIBA was carrying a bond right now.

Holt said originally, SIBA had a $9 million bond in favor of the city. "It's come down to $1.7 million since we've completed all our improvements," he said.

"I'm kind of shaking my head at this. … I've never had a situation where a bond rides 20 years after improvements are completed," Yuen said.

He then asked if anyone had any idea whether the city would accept sewers 40 years after they were built.

"The city's acceptance of this bond from year to year would indicate they were okay with delayed dedication," Moore said.

Yuen said he was "happy on the whole" that SIBA had created "great place for people to do business." However, he was concerned with the potential costs to upgrade the underground infrastructure.

In his motion to approve the recommended lease amendments, Yuen offered some of his own. He recommended that the contingency for the road bond remain at 10 percent, but those for the sewer and drainage bonds be increased to 50 percent above estimates for upgrades or repairs.

In addition, he recommended that SIBA, with the assistance of the state, try to get the city to accept the dedication of the sewage and drainage systems without the roads. He also recommended that the DLNR and SIBA ask the city whether it foresees any problems with dedicating old infrastructure at some point in the future and report back to the Land Board. He recommended the lease amendments not be finalized until after that report has been presented.

"One of the things I'm really concerned about is, with sea level rise, saltwater intrusion into the sewer lines. I don't know what the situation is right now. … Maybe I'm crazy, but I'm worried about it. … If you can, dedicate the sewer lines, try to see if you can talk them into it, then we can get out of this whole bond situation," Yuen told Borges.

"That's an excellent suggestion," Borges replied.

"We can try to see if the city will just take the sewer. We'll make that effort," Holt added.

With that, the Land Board approved Yuen's motion.

### *Lot 113*

In addition to approving the amendments regarding the dedication of infrastructure, the Land Board also rescinded its requirement that SIBA get board approval for any subleases. It also approved the Land Division's request to issue SIBA a revocable permit for a portion of a lot within the park that was not included in the master lease.

Lot 113, where SIBA has long housed its office trailer, was originally intended to be the site of a commercial center developed by either the state or SIBA. If and when that center was built, SIBA would have been allowed to keep a 1,000-square-foot office there for free.

That center was never built, but SIBA has parked its office trailer there for years and used the rest of the lot as a parking area for its tenants and their employees.

SIBA's tenants employ thousands of people and most of them park on the street, double park in the subdivision, or park on Lot 113, a Land Division report states.

The report explains that division staff have been working with SIBA for years on a plan for the disposition of the lot "so that it can be utilized more fully."

SIBA had sought to amend the master lease to include the lot and published an Environmental Assessment and received a Finding of No Significant Impact for the development of office space and parking on it. However, SIBA ultimately balked at the appraised rent.

Last September, an inspection of the lot by division staff found several unauthorized uses, including the "parking of numerous vehicles for purposes unrelated to the SIBA office, multiple abandoned or unattended vehicles, storing of construction materials, and an unauthorized structure," the report stated.

On September 3, 2020, the department

***Continued on next page***

*Board from Page 7*

issued SIBA a notice to stop all of the unauthorized uses within two months. SIBA asked for another month to comply. A December inspection found that the site was just being used for SIBA's temporary office trailer and SIBA staff parking.

Negotiations over the long-term disposition of the lot are ongoing, the report states, adding that the revocable permit is an interim measure.

For any uses of the lot that extended beyond 1,000 square feet, SIBA would have to pay fair market rent.

### *SB 176*

While SIBA testified in support of the lease amendments proposed by the Land Division, the organization would rather get out of its lease altogether. It's tried repeatedly over the years to get legislation passed that would help achieve this. About a decade ago, a land exchange was contemplated, but ultimately rejected.

This past legislative session, Senate Bill 176 proposed amending the state law regarding industrial parks to allow lessees to purchase their lots. The bill would also have limited the escalation of lease rents over a five-year period to the percentage specified in the Consumer Price Index or 10 percent, whichever was smaller.

Holt noted in written testimony that 2011's Act 235 authorized the DLNR to consider the sale of the Sand Island parcels to SIBA tenants, but the DLNR and SIBA were unable to agree on a price.

"Professional real estate appraiser Jon Yamaguchi estimates that the state revenues generated by this bill would amount close to $200 million dollars, which shall be distributed in equal amounts to the state general fund and the special land and development fund. These monies will significantly help to balance the State's budget and manage the projected shortfall due to the SARS-CoV-2 pandemic," Holt wrote.

He also asked the Legislature for help with the rent increases SIBA is facing under its current lease. "SIBA would … appreciate your assistance in addressing our rent escalation of 22.5 percent at the end of the fifth year of each ten-year reopening period. The step-up was intended to compensate the state for discounted rent in the first 25 years of the lease. However, SIBA contends that rent for the first 25 years was reasonable rent, not discounted rent, due to SlBA's immense investment in excess of $41 million that was necessary to develop the industrial subdivision that had no infrastructure," he wrote.

The Office of Hawaiian Affairs opposed the sale of what it said were ceded lands.

The DLNR also objected to the idea of selling the lands. DLNR director and Land Board chair Suzanne Case noted in written testimony that the SIBA lease rents "account for about half of the revenues the Department's Land Division generates annually. [Special Land and Development Fund] revenues cover the entire annual operating budget for the Land Division, the department's Office of Conservation and Coastal Lands, and the Dam Safety and Mineral Resources Programs of the department. The revenues fund over 80 department staff positions, including six positions within the Commission on Water Resource Management, and provide funding support to the Division of State Parks and various resource protection programs administered by the Division of Forestry and Wildlife such as the protection of threatened and endangered species, removal of invasive species, wildland firefighting and lifeguard services."

She added, "The sale of the parcels in the industrial park would deprive the SLDF of a critical income source and severely compromise the department's operations. Instead of lease rent for the next 25-30 years, the SLDF would instead receive the income from the fee sales. However, those revenues would be split between the SLDF and the general fund. Furthermore, if the revenues from the sales exceed the spending authority of the SLDF, the surplus funds could also be subject to raids and diverted to the general fund as well, leaving the department with no revenues from the sale or future lease rent."

While the bill crossed over to the House of Representatives, the house never held a hearing on it.

(For more background on this, see, "Board Talk: OHA, DLNR Reject Sand Island Sale," from our March 2013 issue.)

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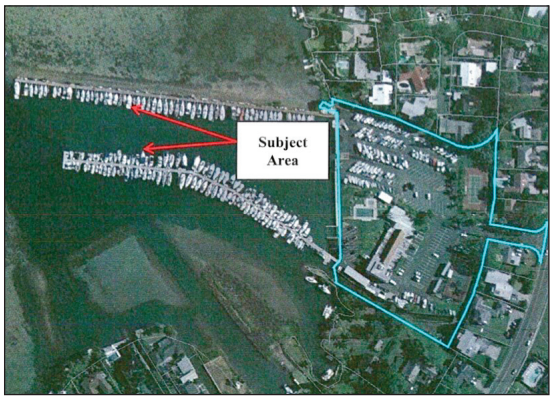
## House Blesses Auction Of Land Used by Yacht Club

On April 19, in accordance with a decision made earlier this year by the Board of Land and Natural Resources, the state House of Representatives adopted a concurrent resolution authorizing the public auction of a 55-year lease for submerged lands where the Kane'ohe Yacht Club has its piers.



Red arrows point to the areas now occupied by the Kane'ohe Yacht Club that are to be sold at a public auction.

In January, to end the decades of annually renewing the club's month-to-month revocable permit for the lands, the Land Board approved a request by the Department of Land and Natural Resources' Division of Boating and Ocean Recreation to offer the lands at a public auction.

DOBOR had tailored its request to require that the lands be used for recreational boat pier purposes, and to require bidders to "have permission to access the subject submerged lands from adjacent fast lands."

In effect, the yacht club would likely be the only qualified bidder.

At the Land Board's January 8 meeting, board member Vernon Char expressed his confusion over the requirements that seemed to preclude any other bidders.

DOBOR's Richard Howard admitted that the eligible pool would be restricted by the access requirement.

Because the yacht club owns the piers that sit on the lands to be auctioned, it would have the right to remove them if it did not win the lease. Otherwise, the ownership of the piers would revert to the state, Howard added.

To Kaua'i board member Tommy Oi, "it's not a fair auction," given the access requirement.

"I don't know. It's not the largest pool. Correct. Nobody else has expressed interest in using that land. The neighbors to either side have not inquired about renting the submerged land," Howard replied.

"The question is not so much gonna be who gets it, because the likely bidder will be the yacht club, but the price for it,"

***Continued on next page***

*Board from Page 8*

board chair and DLNR director Suzanne Case explained.

Board member Chris Yuen agreed, noting that with or without the access requirement, "the only practical bidder is the Kane'ohe Yacht Club."

"For better or worse, we're kind of stuck together," he continued. "They need the lease … and from our point of view, you need a substantial piece of property next to the piers to use them. At the very least, you need a parking lot."

He said he was glad to see that the upset price DOBOR set would bring in substantially more rent than what the yacht club has been paying. Under the proposed minimum lease rent, rather than earning revenues based on a rate of $4.75 per foot per month on each of the vessels moored at the yacht club's piers, DOBOR's revenues would likely be based on a rate of $8/foot/month, Yuen estimated.

"It's a bargain," he said. He added that even though he was unhappy with the way the appraisal that determined the upset price was done, "I think we're in the ballpark."

He pointed out that if the state set the minimum rent too high, and the yacht club then chose not to bid, "we end up in a game of chicken. If they pull the piers out, we both lose."

In the end, the board approved DOBOR's request as submitted, although Char abstained.

(For more background on this, see, "Board Talk: Boating Fees, Bottomfish Reserves, and Yacht Club Encroachments," from our February 2019 issue, and our July 2, 2020 EH-XTRA item, "Kaneohe Yacht Club Keeps Permit, For Now." All are available free on our website, environment-hawaii.org.)

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## Sierra Club Finally Gets Contested Case Hearing

On August 13, in accordance with a May 28 ruling by the 1st Circuit Court, the Board of Land and Natural Resources finally granted the Sierra Club of Hawai'i's request for a contested case hearing on permits that would allow Alexander & Baldwin and the East Maui Irrigation Co. to divert East Maui stream water for agricultural and domestic uses through the end of next year.

The action came weeks after 1st Circuit Judge Jeffrey Crabtree cut the amount of water the companies could divert, pending the conclusion of the contested case hearing, from the 45 million gallons a day (mgd) allowed by permits approved by the Land Board in 2020 to just 25 mgd, which is closer to what is actually being used.

For years, the Sierra Club has objected — at both the Land Board meetings and in court — to what it saw as the board's over-allocation of East Maui stream water to A&B and EMI. While a 2018 Commission on Water Resource Management decision amending the interim instream flow standards of about two dozen of the diverted streams resulted in substantial restoration of natural flows, it did not include any protection for a dozen other streams in the Huelo area.

The Sierra Club has sought to not only have these streams protected, as well, but to get A&B/EMI to take better care of the watershed that feeds them.

At the board's August 13 meeting, the Department of Land and Natural Resources' Land Division had attempted to limit the scope of the contested case hearing "to only address evidence and arguments which were not or could not have been brought before the court in the direct action or the CWRM 2018 decision."

Attorney David Kimo Frankel, representing the Sierra Club, argued that such a restriction would violate the law and the organization's due process rights. It would also preclude necessary evidence, such as the Water Commission's 2018 decision, from being submitted.

"There is no need to limit the scope. If we wanted to drag things out, we wouldn't have submitted a written petition [for a contested case]. We've been begging [deputy attorney general] Linda Chow to put this on or a related item for many weeks now," Frankel said, adding that he didn't think the hearing would last more than five days.

In any case, he said the Sierra Club's primary focus during the hearings will be to address the lack of protection for the dozen streams in the Huelo area that have no meaningful interim instream flow standards and the degree to which A&B and EMI are wasting the water they are diverting.

"It is really a problem when more than half of the water that's taken is wasted. And it just simply is not used and that needs to stop," Frankel said.

Frankel said the Sierra Club also believes that the companies should be paying the DLNR to help deal with the invasive species that are a problem in the revocable permit area.

After holding an executive session, the board voted unanimously to grant the Sierra Club's request for a contested case hearing on the remainder of the 2021 revocable permits and their continuation through the end of 2022.

Board member Doreen Canto said in her motion to approve the hearing that it was the intent of the board that the contested case hearing not duplicate matters decided at the trial or the 2018 CWRM decision.

The board voted to have the hearing's scope be determined by Land Board chair Suzanne Case and the hearing officer, authorized Case to select the hearing officer, and urged her to serve in that role.

On August 23, Judge Crabtree issued his Findings of Fact, Conclusions of Law, and Decision and Order in the lawsuit the Sierra Club had filed regarding these permits.

The order stayed his May 28 interim decision to vacate A&B/EMI's permits for 2021, and reiterated his earlier decision requiring the Land Board to hold a contested case hearing as soon as practicable.

He chose to retain limited jurisdiction to further modify the existing permits if necessary. His jurisdiction would last until a further order from the court or until a decision in the contested case hearing is made.

"If it appears to any party that the court's modification may or is leading to any shortage for the county, for Mahi Pono [the current owner of most former A&B land] or for other recognized beneficiaries, that party may immediately contact the court so that an expedited process can be set to hear and address any problems immediately," he wrote.

On August 31, A&B/EMI issued a Final Environmental Impact Statement for the long-term water lease for the four license areas of Nahiku, Ke'anae, Honomanu, and Huelo that it has long been seeking. The lease, if won at a public auction, would end the annual permit renewals that have gone on for decades.

According to a DLNR press release, the DLNR's Land Division expects the Land Board to consider whether to accept the FEIS on September 24.

(For more background on this, see our November 2020, and February, May and

***Continued on next page***

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June 2021 New & Noteworthy items, as well as our October 2020 story, "Court Holds Final Arguments in Case Over Stream Diversions in East Maui.")

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## Board Issues Large Fine For Kona Site Damages

On August 13, the Land Board fined the archaeological firm Garcia and Associates (GANDA), and one of its principals, Cacilie Craft, $144,000 after determining it had failed to prevent damages to historic sites on land in North Kona owned by their former client, Nichole Kanda.

The board assigned a $5,200 fine to Kanda, who worked with Craft in 2018 on an archaeological inventory survey and preservation plan for the historic features on the land.

The survey identified 13 sites with 57 components. Nine were traditional Hawaiian sites and four were post-contact sites associated with ranching, according to a report by the State Historic Preservation Division (SHPD). The plan called for a five-meter-wide buffer zone around each feature and required that only hand tools be used to clear vegetation.

PHOTO: SHPD

An historical wall that was breached to install a hog wire fence.

But Kanda's grubbing work in early 2019 was not limited to hand tools. It included the extensive use of a bulldozer.

Despite her and her family's efforts to flag all of the sites identified in the AIS, and even with an archaeological monitor on site, dozens of features ended up being altered or destroyed.

On September 17, 2019, apparently unaware of the damages, Craft forwarded to SHPD an unsigned, undated letter from the monitor, Leinaala Benson. The letter, according to a SHPD report, stated that all grubbing work had been done in compliance with the preservation plan, and no archaeological sites had been disturbed. "Ms. Benson explicitly states in her letter that the archaeological sites were intact," SHPD wrote.

But just a week later, an attorney for Kanda informed SHPD that Kanda may have damaged some sites. Kanda had hired a different archaeological firm to assess her property for any potential violations. The firm, ASM Affiliates, found that the buffer zones for 12 of the 13 sites were encroached by mechanical grubbing activities — and it also found 11 new sites that had not been previously documented.

In October 2019, the County of Hawai'i issued Kanda a notice of violation for grading without a permit. Had she obtained the proper permit, SHPD would have had to review and approve the work she had planned.

SHPD conducted its own inspection in February and found walls, complexes, and cobble mounds and cairns had been damaged or destroyed.

The division found that Kanda violated state law when she had her property bulldozed without a grading permit and SHPD reviews and approvals. It also determined that GANDA and Craft were responsible for ensuring that Kanda complied with mitigation commitments and permit conditions.

It adds in its report to the Land Board that Hawai'i Administrative Rules state that "[s]hould a party alter an archaeological property without a permit or should not fulfill a permit's conditions, the principal investigator of the archaeological work or the firm, or both shall be subject to penalties."

"Both GANDA and Ms. Craft violated [state historic preservation laws] by failing to perform their respective duties … and failing to halt the unpermitted grubbing and grading that resulted in damage and alteration to archeological features on the property," the division stated.

SHPD recommended that the Land Board assess the maximum fine of $10,000 for each of the 40 individual features that had been damaged, an overall injury and destructive impacts fine of $10,000, plus a fine of $5,000 for administrative costs, for a total fine of $415,000.

It recommended that 80 percent of the fine ($332,000) be levied against GANDA and Craft. As for Kanda's portion, SHPD recommended that the remaining fine of $83,000 be reduced by $15,000, which is what she paid to ASM Affiliates.

"Since Ms. Kanda could reasonably expect the archaeological consultant would ensure that all work was in compliance with the agreed upon conditions, the SHPD is recommending that Ms. Kanda be accountable for only 20 percent of the total damages," the division wrote.

At the Land Board's August 13 meeting, testimony from Kanda and Craft revealed that after SHPD had approved the preservation plan GANDA had prepared, Craft informed Kanda that GANDA did not have any staff available to mark the sites to be protected or oversee the implementation of the plan.

Craft said she recommended that Kanda look for another firm to do the job, but later agreed to coordinate with Benson, a former GANDA employee whom Kanda also knew. As for flagging the sites and marking their buffer zones, that task fell to Kanda and her children, who walked the 22-acre property with copies of the archaeological survey as a guide.

Kanda said she provided the bulldozer operators with maps showing the sites and buffer zones. Benson was to be the site monitor and provide Craft with regular updates on the work being done, Craft said.

"I was very adamant that I needed to work with Lei before the work took place. I never had that opportunity," Craft said. She added that when she found out that work had taken place on the parcel, Kanda and Benson assured her that the preservation plan had been followed and no sites were damaged.

While she said she never did get any documentation of the work that had been done, she forwarded to SHPD Benson's letter reporting that all was fine.

"In hindsight, I certainly regret forwarding that letter," Craft told the board.

Bob Rechtman, CEO and a principal at ASM Affiliates, testified that Kanda was "let down by the system. More specifically, by various actors [including] SHPD, her grubbing contractor, and her archaeological contractor."

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He agreed with SHPD's position that GANDA and Craft should bear the brunt of the fines, but said he felt that Kanda should not have to pay anything.

Board member Chris Yuen lamented that Benson did not appear to have been interviewed by SHPD and was not present at the board's Zoom meeting to answer questions.

"She's pretty clearly here a key witness," he said.

Yuen disagreed with Rechtman that Kanda should not pay anything, especially since the preservation plan required that clearing only occur with hand tools.

"I'm very sympathetic to Ms. Kanda, but I do think that as a landowner, she bears some financial responsibility for this," he said.

The board members were, however, open to reducing the total fine, since the features damaged didn't seem to them to be worthy of the maximum fine.

In the end, the board chose to apply a fine of $500 for the former ranch sites and $5,000 for the probable native Hawaiian sites, for a total fine of $180,000. GANDA and Craft would be responsible for $144,000 of that. Kanda's $36,000 fine would be reduced by what she paid to both archaeological consultants, leaving about $5,200.

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## Overbuilt Revetment Draws Fines, Removal Order

Douglas Johnson, owner of a shrinking beachfront lot in Punalu'u, O'ahu, has repeatedly violated the terms under which the Department of Land and Natural Resources allowed him to install temporary emergency erosion control revetments over the years.

Most recently, on August 13, the Land Board imposed an $18,000 fine: $15,000 for modifying his existing sandbag seawall without proper approval, $1,000 for unauthorized encroachment onto public lands, and $2,000 for administrative costs.

The board also gave Douglas until next June to remove what he had put in, allowing him to get $10,000 back if he completed the work on time.

He also received another three-year permit for another temporary sandbag structure, with the clock starting August 13.

For the current structure, Douglas had received an emergency permit in November 2019. It allowed for the placement of 20 cubic yards of sand, a SEAblanket with geotextile fabric, and three rows of SEAbags. The entire structure was to extend no more than 9-12 feet seaward of the erosion scarp.

The work was meant to replace what he had been allowed to install under a previous permit.

A May 2020 inspection by the DLNR's Office of Conservation and Coastal Lands found that Douglas had way overbuilt his revetment.

"We found a 9- to 10-foot tall structure extending 24-27 feet onto state land; 10-13 rows of SEAbags and also use of Elcorock bags. … We have never recommended these Elcorock for temporary structures," said the OCCL's Michael Cain. Elcorock bags are mesh nets filed with rocks, and are used more often for permanent structures, while SEAbags are sand-filled and meant to degrade over time.

"This is a clear-cut case. There is a structure on state owned lands that was not permitted," Cain said.

"This is one structure out of what is turning into a systemic problem in the way we manage or don't manage coastal erosion on our shorelines," he added, noting that the OCCL had recently investigated 75 private shoreline structures that appear to be in violation of Conservation District rules. Some of those cases that have already been brought to the board are being disputed in contested case hearings or in court. Others have only recently been submitted to DLNR director Suzanne Case for review. The remaining 60 are still being investigated, but may wrap up soon, he said.

"We expect those who receive these discretionary permits to comply," Cain said.

Jeff Overton of G70, who has been working with Douglas and six adjacent landowners on a longer-term solution to the erosion of their properties, explained how unapproved materials came to be used. During construction, "the geotextile vendor could not provide any other material to satisfy the project except for Elcorock bags."

He added that the costs to install, remove, and replace the structure, in addition to the fines, would, in the end, reach around $200,000.

"That seems to me crazy for emergency protection for a lot like this,' he said.

With the city having already rejected his clients' proposed sloping rock revetment years ago, Overton said that the Punalu'u homeowners are now proposing a pilot sandbag groin project, which he said is also being looked at as a solution in Lanikai.

At Punalu'u, the project would include some beach nourishment, as well as a low-profile sandbag groin system composed of six to eight groins containing 20-25 sandbags per groin. Each groin would extend 40-50 ft offshore.

"Once these houses go, it becomes a state problem because the highway is right [behind them]," Overton warned.

Board members did not indicate whether or not they would be amenable to such a project. — ***Teresa Dawson***

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# UH Oceanographer Predicts Sharp Rise In High-Tide Flood Events By Mid-2030s

By now, most people are familiar with the "hockey stick" phenomenon. That occurs when a trend that may have been bumping along at a gradual increase suddenly shoots skyward, going nearly vertical over a relatively short period.

It appears on graphic depictions of COVID-19 infections, for example, and on charts showing increases in carbon dioxide levels over time.

And it appears yet again in charts prepared by Dr. Phil Thompson, an oceanographer with the School of Ocean and Earth Science and Technology at the University of Hawai'i.

In particular, it shows up in forecasts Thompson has made of high-tide flooding events that Hawai'i can expect to see in years to come.

Thompson described his work in a webinar on coastal hazards sponsored by the UH Sea Grant program in July.

High-tide floods, Thompson explained, are not caused merely by extra-high tides. Rather, they are the result of a number of factors that can affect the sea level along the coast. This can include everything from low barometric pressure to ocean eddies, from warm ocean temperatures to seasonally high tides.

To create a flooding event, Thompson said, these factors can "stack" up. When that stack exceeds the mean higher high water mark (MHHW) by 30 to 40 centimeters, a high-tide flood can occur, causing roads and streets to flood, coastal areas to erode, and cesspools to leak, among other things.

"On an individual basis," Thompson said, "one event perhaps doesn't cause a great impact. But when many events occur, and their frequency increases, then we can start to have issues."

Water levels have been measured hourly in Honolulu Harbor for more than a century, going back all the way to 1914. From these measurements, Thompson has been able to graphically show the gradual rise in high water levels over time.

Up until the late 1960s, there were no high-tide flood days at all (days in which water levels were 35 centimeters – about 14 inches -- above the MHHW mark). In the entire decade of the 1990s, that level was exceeded fewer than 10 days.

But over the last five years or so, Thompson said, "you start to see much higher numbers."

"2020 set a record, with 18 days above the threshold," he said. "The impact is a little subtle, but there's a general rise of sea level, slowly pushing more and more of those hourly water levels above the threshold. And we can expect to see more in the future."

In years to come, high-tide flooding events will become more frequent, he said, but the frequency of these events "will not increase smoothly. Periods of little change will alternate with periods of rapid change."

Over the decade of the 20s, the number of high-tide flooding days will likely remain under 20 per year, for most years. But the mid-2030s "marks the onset of a rapid increase" in the frequency of high-tide flood events. Mid-2030 marks a "really important tipping point for the whole state," according to Thompson's scenarios.

From the mid-30s to the start of 2040, under Thompson's "most likely" scenario, the trend in the number of high-tide flooding days will take a sharp upward swing, going from around 20 such events per year to nearly 80. "The switch will flip" in the mid-30s, Thompson said. "Expect to see a quadrupling from 2030 to 2040." — ***P.T.***

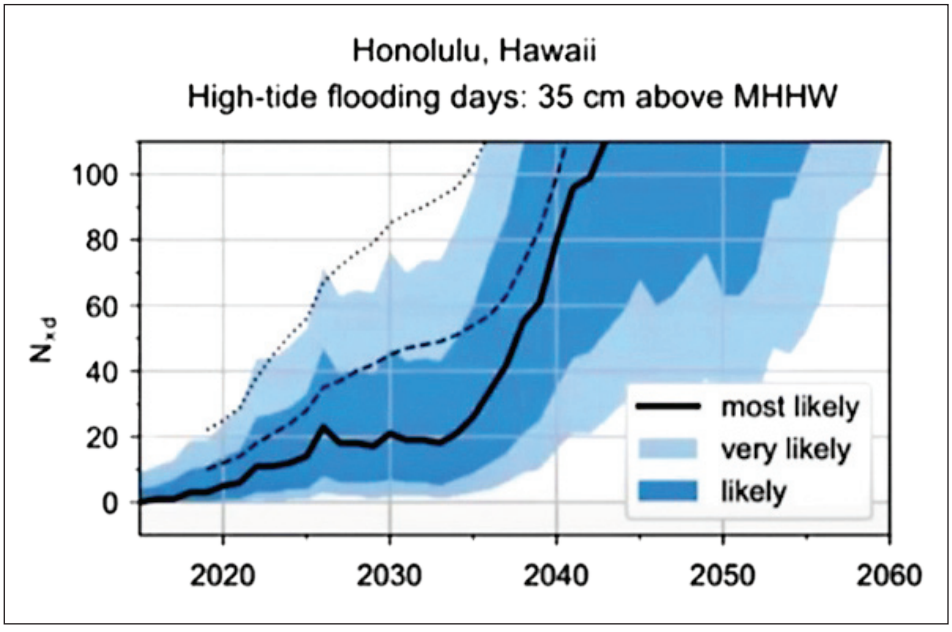


PHOTO: DR. PHIL THOMPSON