JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA

P.O. BOX 621
HONOLULU, HAWAII 96809

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

RYAN K.P. KANAKAʻOLE
FIRST DEPUTY

DEAN D. UYENO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Testimony of
DAWN N. S. CHANG
Chairperson

Before the House Committee on
FINANCE

Monday, February 26, 2024
3:30 PM
State Capitol, Conference Room 308 & Videoconference

In consideration of
HOUSE BILL 1900 HOUSE DRAFT 1
RELATING TO HYDROLOGIC DATA COLLECTION

House Bill 1900, House Draft 1, proposes to appropriate an unspecified amount of general funds for Fiscal Year (FY) 2025 to improve the State's understanding of the complex hydrologic systems in Hawai‘i by providing funding for stream gages, operating and maintaining the Hawai‘i *Mesonet*, and monitoring wells. **The Department of Land and Natural Resources supports this bill provided that its passage does not replace or adversely impact priorities indicated in the Executive FY 2025 Supplemental Budget request.**

The Commission on Water Resource Management (Commission) acknowledges the need for increased and improved hydrologic data collection across the state of Hawai‘i. Recent studies have shown that annual rainfall has declined in Hawai‘i since the late 1980s and that air temperatures have increased since the 1950s. These trends may impact the availability of water as well as the demand for water in the future. The continuation and expansion of hydrologic monitoring is necessary to advance our monitoring of the impacts of climate change and to better manage the ground and surface waters across the islands. To refine our understanding of the data collection gaps and opportunities, the Commission collaborated with the U.S. Geological Survey (USGS) in a study to outline priorities for expanding Hawai‘i's hydrologic data collection network (*Water-Resource Management Monitoring Needs, State of Hawai‘i, USGS Scientific Investigations Report 2020-5115*). The results of the study demonstrate a great need for increasing groundwater, surface water, and rainfall data collection in Hawai‘i.

The Commission is responsible for managing 376 perennial streams in Hawai‘i. The number of stream gages across the state of Hawai‘i has decreased from 197 gages in 1966 to around 92 continuous gages today. To monitor streamflow in critical areas, the Commission executes an annual joint funding agreement with the USGS to maintain and service stream gages statewide. The Commission's cost-share has proportionally increased from 50% in 2002 to 82% in 2024 due to federal budget restrictions. The Commission also operates its own stream gaging network to supplement the cooperative USGS network. Increasing funding for stream gaging is crucial to monitoring the impacts of climate change and managing surface water resources, including the establishment and monitoring of instream flow standards and protecting public trust purposes of water.

The University of Hawai‘i Water Resources Research Center recently established the Hawai‘i *Mesonet*, a statewide network of climate monitoring stations, with the goal of fielding approximately 100 stations. Besides the installation costs, a key aspect of keeping the *Mesonet* effectively functioning are the ongoing operation and maintenance costs, which include calibrating and replacing instruments, maintaining communication equipment, batteries, and solar panels, and the sometimes-hidden cost of data quality control and storage. Funding for the operation and maintenance of the *Mesonet* will ensure that this system continues to provide high quality data into the future.

The Commission is also responsible for managing 114 aquifer system areas in Hawai‘i. Monitoring groundwater is imperative to understanding the condition and health of an aquifer. The data collected from monitor wells can be used to assess changes in the freshwater lens, seawater intrusion, over-pumping, impacts to climate change, and provides valuable data for numerical ground water modeling. The Commission currently operates 38 standard monitor wells and 13 deep monitor wells across the state and is thankful for the Legislature's approval of capital improvement funds for deep monitor well construction. An increase in operating funds for monitoring wells will allow staff to continue to maintain and enhance our data collection capabilities from existing and future monitor wells.

Mahalo for the opportunity to comment on this measure.

JOSH GREEN, M.D.
Governor

SYLVIA LUKE
Lt. Governor

SHARON HURD
Chairperson, Board of Agriculture

DEXTER KISHIDA
Deputy to the Chairperson

State of Hawai'i
DEPARTMENT OF AGRICULTURE
KA 'OIHANA MAHI'AI
1428 South King Street
Honolulu, Hawai'i 96814-2512
Phone: (808) 973-9600 FAX: (808) 973-9613

TESTIMONY OF SHARON HURD
CHAIRPERSON, BOARD OF AGRICULTURE

BEFORE THE HOUSE COMMITTEE ON FINANCE

MONDAY, FEBRUARY 26, 2024
3:30 PM
CONFERENCE ROOM 308

HOUSE BILL NO. 1900, HD1
RELATING TO HYDROLOGIC DATA COLLECTION

Chair Yamashita, Vice Chair Kitagawa and Members of the Committee:

Thank you for the opportunity to testify on House Bill 1900, HD1. This bill appropriates funds to improve the State's water resource management and hydrologic data collection. The Department is in strong support of this bill and offers comments.

Farmers, ranchers, aquaculturists and floriculturists are faced with a myriad of decisions every day that include weather-related decisions such as when to plant or harvest, when to irrigate and how much water to use, and when to fertilize or apply pesticides. Ranchers are hardest hit when it comes to drought, heavily impacting grass-fed operations. In the years 2008-2018, the USDA Livestock Forage Disaster Program paid out over $50 million to ranchers in Hawaii that sustained grazing losses due to drought.

This bill provides the University of Hawai'i funding to build the capacity of Hawai'i Mesonet which will consist of more than 100 stations spread across seven islands. The locations are selected to fill gaps in the existing network and cover the full range of island microclimates, that include farming and ranching zones. The data collected -- air temperature, wind speed/direction, relative humidity, rainfall, soil moisture/temperature – is valuable to Hawaii agriculture operations. The Hawai'i Mesonet sensors scan at 1-

second intervals and averages are recorded every 5 minutes, is then transmitted every 15 minutes and made available to the public immediately on their website. https://www.hawaii.edu/climate-data-portal/hawaii-mesonet/

The Department considers the data important to Hawaii farmers, ranchers, aquaculturists and floriculturists and stands ready to support the project with outreach and technical/regulatory guidance.

Thank you for the opportunity to testify on this measure.

UNIVERSITY OF HAWAIʻI SYSTEM
ʻŌNAEHANA KULANUI O HAWAIʻI

Legislative Testimony
Hōʻike Manaʻo I Mua O Ka ʻAhaʻōlelo

Testimony Presented Before the
House Committee on Finance
Monday, February 26, 2024 at 3:30 p.m.
By
Thomas Giambelluca, Director
Water Resources Research Center
And
Michael Bruno, PhD
Provost
University of Hawaiʻi at Mānoa

HB 1900 HD1 – RELATING TO HYDROLOGIC DATA COLLECTION

Chair Yamashita, Vice Chair Kitagawa, and members of the Committee:

The University of Hawaiʻi (UH) **strongly supports HB 1900 HD1,** which appropriates funds for Fiscal Year (FY) 2025 to improve the State's understanding of and ability to monitor the complex hydrologic systems in Hawaiʻi by providing funding for stream gages and monitoring wells, and for the operation and maintenance of the *Hawaiʻi Mesonet*.

The need for comprehensive hydrological monitoring in Hawaiʻi is widely recognized and was rigorously evaluated in a study of the data collection gaps and opportunities done by the Hawaiʻi Commission on Water Resource Management (CWRM) in collaboration with the U.S. Geological Survey (USGS). The study identified priorities for expanding and improving Hawaiʻi's hydrologic data collection network (*Water-Resource Management Monitoring Needs*, State of Hawaiʻi, USGS Scientific Investigations Report 2020-5115). The results of that study identified improved groundwater, surface water, and weather data collection as critical needs in Hawaiʻi.

CWRM is responsible for managing and regulating water resources under the State Water Code (HRS Title 12, Chapter 174C). With 376 perennial streams and 114 groundwater aquifer system areas spread across the varied environments of the State, encompassing wide ranges of geologic conditions, soils, vegetation, and climate, CWRM's responsibilities are vast. The networks of stream gages and weather stations needed to manage these resources has declined steeply since the 1960s, with the number of stream gages now reduced to less than half the number that operated in 1966.

Weather monitoring similarly declined in recent decades. While climate information has been gathered for over 100 years by various entities in the islands, the climate observing network in Hawaiʻi was, until recently, fragmented, unmanaged, declining in

spatial coverage, and inadequate to meet the needs of the many stakeholders' dependent on the data, data products, and research the data support. Previously, the mainstay of the climate observing network consisted of stations operated by the sugarcane and pineapple industries. With the contraction and eventual cessation of most large-scale agriculture in the islands, many stations were discontinued.

Weather and climate monitoring benefits not only water resource management, but also weather forecasting, agricultural irrigation management, pasture management, emergency management (including wildfire and flood risk warnings and response), recreation, and numerous other interests. Recent disasters driven by weather extremes illustrate the need for a more comprehensive, high quality, telemetered monitoring network. The inability to provide accurate warnings and to respond to the historic flood events in Halele‘a, Kaua‘i, and southeastern O‘ahu in April 2018, on Hawai‘i Island and Maui in response to Hurricane Lane in August 2018, and the devastating Maui fires of August 2023, should serve as a wake up call regarding the need for improved weather observations.

In response to the overwhelming need for better data, the University of Hawai‘i (UH) Water Resources Research Center (WRRC) recently established the Hawai‘i Mesonet, an eventual 100-station, statewide network of advanced weather and climate monitoring stations. Site selection for Hawai‘i Mesonet stations prioritizes areas lacking coverage on all islands, with particular attention to the needs of emergency managers, flood forecasters, wildfire prevention and response agencies, farmers, ranchers, and water resource managers. WRRC was able to secure $1.5M of federal support to purchase the necessary equipment, and has support from UH to install the network. To sustain this valuable investment, it is crucially important that funding be provided to operate and maintain the network and provide easy data access to all those who need the data, including CWRM. Fortunately, WRRC has secured support from the National Mesonet Program (NMP) in the form of payments for data that cover about half of the cost of operations, maintenance, and data management. This bill requests State support to cover the remaining costs of sustaining this important resource.

Thank you for the opportunity to submit testimony in support of HB 1900 HD1 provided that its passage does not impact priorities as indicated in our Board of Regents Approved Budget.

LATE *Testimony submitted late may not be considered by the Committee for decision making purposes.

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI`I
345 KEKŪANAŌ`A STREET, SUITE 20 • HILO, HAWAI`I 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

February 26, 2024

TESTIMONY OF KEITH K. OKAMOTO, MANAGER-CHIEF ENGINEER
DEPARTMENT OF WATER SUPPLY, COUNTY OF HAWAIʻI

HEARING BEFORE THE HOUSE COMMITTEE ON FINANCE

DATE: Monday, February 26, 2024
TIME: 3:30 p.m.
PLACE: Conference Room 308 & Videoconference

HB 1900 HD1 - RELATING TO HYDROLOGIC DATA COLLECTION

Honorable Chair Yamashita; Vice-Chair Kitagawa, and committee members,

The enhancements to Hawaiʻi's climate and hydrologic monitoring capacity proposed in this bill will greatly assist us in fulfilling our mission as stewards and stakeholders associated with managing water and environmental resources effectively. Therefore, the County of Hawaii, Department of Water Supply (DWS) **strongly supports HB 1900.**

The importance of comprehensive hydrological monitoring in Hawaiʻi is well-recognized, as emphasized in a joint study by the Hawaiʻi Commission on Water Resource Management (CWRM) and the U.S. Geological Survey (USGS). This study highlighted critical gaps in data collection and emphasized the urgent need for enhanced groundwater, surface water, and weather monitoring. CWRM, which is tasked with managing water resources under the State Water Code, faces significant challenges due to Hawaiʻi's diverse geography and declining monitoring infrastructure. The number and spatial coverage of stream gauges and weather stations have decreased since the 1960s, hindering effective resource management.

Weather monitoring has also suffered, with fragmented and inadequate networks, particularly following the decline of large-scale agriculture. This impacts various sectors, including water resource management, weather forecasting, agriculture, emergency response, and recreation.
Recent disasters, such as floods and wildfires, underscore the necessity for a robust, telemetered monitoring network to provide accurate warnings and response. These events highlight the urgent need for improved weather observations to better protect communities and resources.

Thank you for the opportunity to testify on this measure.

PŪ‘Ā FOUNDATION
Empowering Individuals, Families & Communities

Punahoa
Heritage Forest

SUPPORT OF HB 1900 HD1 RELATING TO HYDROLGIC DATA COLLECTION
HOUSE OF REPRESENTATIVES, THE THIRTY-SECOND LEGISLATURE, REGULAR SESSION OF 2024
FINANCE COMMITTEE
DATE: February 26, 2024; TIME: 3:30 P.M.
State Capitol, Conference Room 308
415 South Beretania Street
Hon., Hawaii 96813
VIA VIDEOCONFERENCE

Aloha e Rep. Kyle T. Yamashita, Chair, Rep. Lisa Kitagawa, Vice Chair, and members of the Committee:

On behalf of the Pū‘ā Foundation, **this testimony is in strong support of HB 1900 HD1, RELATING TO HYDROLOGIC DATA COLLECTION**

By way of background, the Pū‘ā Foundation is a community based nonprofit organization created in 1996. We drive ‘Trauma to Transformation’ programs for justice-involved women, girls & their families, especially Hawaiians. We are also proud stewards of the Punahoa Heritage Forest, and it is within this context that we support this measure.

The enhancements to Hawai‘i’s climate and hydrologic monitoring capacity proposed in this bill will greatly assist us in fulfilling our mission as stewards responsible for managing water and environmental resources effectively. The importance of comprehensive hydrological monitoring in Hawai‘i is well-recognized, as emphasized in a joint study by the Hawai‘i Commission on Water Resource Management (CWRM) and the U.S. Geological Survey (USGS). This study highlighted critical gaps in data collection and emphasized the urgent need for enhanced groundwater, surface water, and weather monitoring. CWRM, which is tasked with managing water resources under the State Water Code, faces significant challenges due to Hawai‘i's diverse geography and declining monitoring infrastructure. The number and spatial coverage of stream gauges and weather stations have decreased since the 1960s, hindering effective resource management.

Weather monitoring has also suffered, with fragmented and inadequate networks, particularly following the decline of large-scale agriculture. This impacts various sectors, including water resource management, weather forecasting, agriculture, emergency response, and recreation. Recent disasters, such as floods and wildfires, underscore the necessity for a robust, telemetered monitoring network to provide accurate warnings and response. These events highlight the urgent need for improved weather observations to better protect communities and resources. **Accordingly, we ask the Finance Committee to support this measure that will provide the funds for stream gauges; for operating and maintaining the Hawai‘i mesonet; and for monitoring wells**. Mahalo for your consideration, and the opportunity to testify on this matter.

Toni Bissen, Executive Director Pū‘ā Foundation
P.O. Box 11025, Honolulu, Hawaii 96828
Email: toni.bissen@puafoundation.net
Websites: www.puafoundation.org; www.punahoaheritageforest.org

Hawaii Cattlemen's Council, Inc.

COMMITTEE ON FINANCE
Rep. Kyle T. Yamashita, Chair
Rep. Lisa Kitagawa, Vice Chair

HB2263 HD1
RELATING TO EAST KAUAI IRRIGATION SYSTEM

Monday, February 26, 2024, 3:30 pm
Conference Room 308 & Videoconference

Chair Yamashita, Vice Chair Kitagawa, and Members of the Committee,

The Hawaii Cattlemen's Council **supports HB1900 HD1** which appropriates funds to improve the State's water resource management and hydrologic data collection.

Ranchers and farmers rely on water to grow our food and care for the land. Comprehensive hydrological monitoring is important for producers to be able to plan long-term and understanding our water systems requires data collection with ample spatial coverage of the state. This data can be interpreted to provide tools for our ranchers to manage their herds and their land appropriately.

Thank you for the opportunity to testify. The Hawaii Cattlemen's Council (HCC) is the Statewide umbrella organization comprised of the four county-level Cattlemen's Associations. Our member ranchers represent over 60,000 head of beef cows; more than 75% of all the beef cows in the State. Ranchers are the stewards of over 750 thousand acres of land in Hawaii, or 20% of the State's total land mass. We represent the interests of Hawaii's cattle producers.

Nicole Galase
Hawaii Cattlemen's Council
Managing Director

Email: communications@ulupono.com

HOUSE COMMITTEE ON FINANCE
Monday, February 26, 2024 — 3:30 p.m.

Ulupono Initiative supports HB 1900 HD1, Relating to Hydrologic Data Collection.

Dear Chair Yamashita and Members of the Committee:

My name is Micah Munekata, and I am the Director of Government Affairs at Ulupono Initiative. We are a Hawai'i-focused impact investment firm that strives to improve the quality of life throughout the islands by helping our communities become more resilient and self-sufficient through locally produced food, renewable energy, clean transportation choices, and better management of freshwater resources.

Ulupono supports HB 1900 HD1, which appropriates funds to improve the State's water resource management and hydrologic data collection.

Data-driven management decisions about our fresh water resources cannot occur without the data on the health of those resources. Since the closing of Hawai'i's last sugar plantation, there has been a steady decline in the number of stream, aquifer, and rainfall data collection stations. These stations provided critical information on the impact that seasonal weather changes and water management decisions had on our streams and aquifers.

Through cooperative agreements with the U.S. Geological Survey and partnerships with the University of Hawai'i, the State of Hawai'i Commission on Water Resource Management (CWRM) has attempted to create a hydrologic monitoring network that provides the data needed to address serious water disputes in areas such as Na Wai 'Eha and West Hawai'i. However, monitoring data still does not exist for vital aquifers such as those in urban Honolulu, where current pumpage exceeds the sustainable limit of those aquifers. If we are serious about leaving the future generations of Hawai'i with thriving freshwater resources, then we must provide CWRM with the funding the commission needs to excel in its mandate to protect the public trust for this vital resource.

Thank you for the opportunity to testify.

Respectfully,

Micah Munekata
Director of Government Affairs

Testimony Presented Before the
House Finance Committee
Monday, February 26, 2024 at 3:30 p.m.
By

Matt Rosener, Hydrologist/Water Resource Engineer
North Shore Hydrological Services

HB 1900 – RELATING TO HYDROLGIC DATA COLLECTION

North Shore Hydrological Services is a consulting and design firm working on projects around Hawaii Nei to better manage, conserve, and improve Hawaii's precious water resources. In the work that I do, as the owner of North Shore Hydro, I use weather and water data very often, and I feel its availability is critical to developing effective solutions to the challenges we're currently facing. By now, we know that our climate is changing and this will impact the islands' water cycle in the present and the future. Because of this, continuation of weather and climate records is extremely important at this time, to ensure we have the best information informing the mitigation strategies that will be essential to our continued way of life in Hawaii.

Likewise, expansion of our monitoring efforts seems to be a very wise idea given the current context of our situation. A rain gage I installed and operated at Waipā on Kauaʻi captured 55 inches of rain in 28 hours during the April 2018 rain bomb storm that caused extensive damage and hardship on the north shore. This rainstorm shattered the previous 24-hour national record for rainfall, and it has changed our thinking about how the climate might be affected in our environment. Low-lying communities like Hanalei are already vulnerable to flooding, and with sea level rising and rainfall becoming more erratic, the floods will be worse. For many years the standard method to predict a 100-year flood was to look at the historical record and assume the future will be like the past. Now we know that this is not true and we must adapt. All the historical records are still of great importance, but we need to increase our monitoring efforts in these changing times.

The enhancements to Hawaiʻi's climate and hydrologic monitoring capacity proposed in this bill will greatly assist us in fulfilling our mission as stewards responsible for managing water and environmental resources effectively. Therefore, **North Shore Hydrological Services strongly supports HB 1900.**

The importance of comprehensive hydrological monitoring in Hawaiʻi is well-recognized, as emphasized in a joint study by the Hawaiʻi Commission on Water Resource Management (CWRM) and the U.S. Geological Survey (USGS). This study highlighted critical gaps in data collection and emphasized the urgent need for enhanced groundwater, surface water, and weather monitoring. CWRM, which is tasked with managing water resources under the State Water Code, faces significant challenges due to Hawaiʻi's diverse geography and declining monitoring infrastructure. The number and spatial coverage of stream gauges and weather stations have decreased since the 1960s, hindering effective resource management.

Weather monitoring has also suffered, with fragmented and inadequate networks, particularly following the decline of large-scale agriculture. This impacts various sectors, including water resource management, weather forecasting, agriculture, emergency response, and recreation.

Recent disasters, such as floods and wildfires, underscore the necessity for a robust, telemetered monitoring network to provide accurate warnings and response. These events highlight the urgent need for improved weather observations to better protect communities and resources.

Thank you for the opportunity to testify on this measure.

Matt Rosener, M.S., P.E.

Hydrologist/Water Resource Engineer

North Shore Hydrological Services

PO Box 1061, Hanalei, HI 96714

HB-1900-HD-1
Submitted on: 2/26/2024 10:02:06 AM
Testimony for FIN on 2/26/2024 3:30:00 PM

Submitted By	Organization	Testifier Position	Testify
Yoshito LHote	Aina Hookupu o Kilauea	Support	Written Testimony Only

Comments:

We are in support of this funding as it will give us more data for water management.

Yosh

HB-1900-HD-1
Submitted on: 2/25/2024 11:45:23 AM
Testimony for FIN on 2/26/2024 3:30:00 PM

Submitted By	Organization	Testifier Position	Testify
Donna Dean Sterling	Individual	Support	Written Testimony Only

Comments:

Testimony presented before the house, finance committee, Monday, February 26, 2024 at 3:30 PM
Bye,

Donna Dean Strtling

resident 22 years Kahikinui Hawaiian Homestead on Maui

HB space 1900 – relating to hydraulic data collection

As a resident of Kahikinui, Lot 41, we are tested with providing our own water, electricity,, to live here. With the enhancements to Hawaii's climate and hydraulic monitoring capacity proposed in this bill will greatly assist us in fulfilling our mission as stewards responsible for managing water and environmental resources effectively. therefore our sterling Ohana strongly supports HB 1900.

because we live off grid in the moku of kahikinui 22,000 acres, having water data, solar data wind data is critical to our survival. We have experienced 14 wildfires in the 22 years of homesteading. Every type of data recovery medonet can do and state and bring forward to our community is necessary calling this effort a humanitarian bill.

Please please support this bill for the sake of homesteaders in kahikinui Maui and through the paw Aina.

The importance of comprehensive hydrological monitoring in Hawaii is well – recognized, as emphasized in a joint study by the Hawaii commission on WATER resource management, parentheses CWRM in parentheses and the United States geological survey. The study highlighted, critical gaps and data collection and emphasized the urgent need for enhanced groundwater, surface, water, and whether monitoring. CWRM, which is tasked with managing water resources under the state, water, cold, face significant challenges due to Hawaii diverse geography and declining monitoring infrastructure. The number and spatial coverage of stream gauges and weather stations have decreased since the 1960s, hindering effective resource management.

weather monitoring has also suffered, with fragmented and inadequate networks, particularly following the decline of large – scale agriculture. This impacts various sectors, including water, resource management, weather, forecasting, agriculture, emergency, response, and recreation.

Recent disasters, such as floods and wildfires, underscore the necessity for a robust TeleMed metered monitoring network to provide accurate warnings and response. The events highlight. The urgent need for improved weather observations to better protect communities and resources.

thank you for the opportunity to testify on this measure.

Restore the Commons

Monday, February 26, 2023, 3:30 pm

House Committee on Finance

HOUSE BILL 1900 – RELATING TO HYDROLOGIC DATA COLLECTION.

Position: Comment

Me ke Aloha, Chair Yamashita, Vice-Chair Kitagawa, and Members of the House Committee on Finance:

HB1900 appropriates funds to improve the State's water resource management and hydrologic data collection, namely a "Hawaii mesonet" climate-observing network to overcome data that is fragmented, unmanaged, declining in spatial coverage, and inadequate to meet the needs of researchers and stakeholders.

While data gathering for these purposes is recommended, one must wonder at the value of additional decimal points of certainty when the underlying needs are clearly understood. In a similar vein, the entire world is fully aware of the needs to counteract climate change – we do not need more certainty about that. We need action.

Projections for Hawaii's climate are very clear, and current long-term trends are also very clear that precipitation is both on the decline overall and splitting into perennial drought and torrential flooding rather than used-to-be-normal steady Trade showers. The impacts on ground water and surface streams are also understood. How much "better" do we need to understand before we take urgent, long-needed action?

One must ask whether we need to start funding people to do the work of mitigation and adaptation, or whether we "need" to develop greater confidence in knowing how bad existing conditions are deteriorating.

Mahalo for the opportunity to address this issue,

/s/ Charley Ice

Planner, Department of Hawaiian Home Lands and liaison to the Water Commission (10 years) and Hydrologist, Commission on Water Resource Management (25 years) (retired)

Feb 26, 2024

To the Finance Committee of the House of Representatives

I am writing in SUPPORT of HB1900.

In order to best combat the effects of climate change, including drought and flooding, accurate data is needed to describe how our environment is changing. Hawai'i has long needed rainfall and weather data to inform watershed management decisions – including how much water is available now and into the future, the risk of fire, and the scale of flooding that would determine design considerations for our future infrastructure. This data is not only important for our watershed managers, but also for our agricultural businesses, who rely on good data to understand what choices are needed to best manage their crops or livestock.

The Water Resource Research Center at the University of Hawaii at Manoa has completed all the preliminary design and engineering requirements to install and deploy a weather monitoring network across, including working with individual landowners for access, and determining which locations are needed most urgently to provide up to date information about our rainfall and weather conditions.

I urge you to help appropriate the funds for this needed data, so that water resource managers can improve guidance to all of us in the State reliant on our water for life.

Sincerely,

Dr. Kim A Falinski

Water resources engineer