

# Sustainable Hawaii, LLC

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April 16, 2024

Hon. Dawn Chang, Chairperson, and Members  
Board of Land and Natural Resources  
P. O. Box 621  
Honolulu, Hawai'i 96809

Dear Chairperson Chang and Board Members:

Since 2008 Sustainable Hawaii, LLC has been privileged to own about half the land underlying Wahiawa Dam and Reservoir (WD&R) which has been leased to Dole and its predecessors for over 120 years. We acquired the asset in part because we thought it was of such critical value to our North Shore community, that it should be owned by someone with the community's best interest at heart. In that spirit, I address you and the Board.

## **I. The Dam, Reservoir and Community:**

WD&R was constructed of rock and dirt, just below the confluence of the North and South Forks of Kaukonahua Stream by Waialua Water Company in 1903 -5. It is about 600 feet wide and 98' high with a 170' wide concrete spillway, eight feet below the crest of the dam. It was designed to hold 2.5b gallons of water; In good years WD&R can provide 18,000 acre feet of water; enough to irrigate 26 square miles of North Shore agricultural lands. The watershed providing water to WD&R consists of 16.1 sq. miles in the Koolau Mountains above Wahiawa, about 1/3 of the total watershed that empties into the Pacific at Waialua and Haleiwa through rivers including Poamoho, Helmano, Opaepa, and Anahulu Rivers.

WD&R was built to provide water for Waialua Sugar and Dole pineapple operations. It has provided part of the economic foundation of that agriculture, the North Shore economy, and Waialua, Haliewa and Wahiawa families for five generations.

But from the 1990's onward, sugar has been gone, and pineapple diminished. Dole continues to grow pineapple, and now coffee, and cacao. But use of much of the North Shore agricultural lands and WD&R water has been in transition to new crops and new farmers. In the Central Valley and North Shore, WD&R water is critical because for six months from May to October each year, there is very little rain. Without WD&R there could be no North Shore agriculture, and most North Shore lands could no longer be considered "important agricultural lands."

Through the years, WD&R has also come to serve a collection of other public purposes as well. Chief among these has been flood control: to protect the Haleiwa and Waialua communities from flooding in major storms. In cooperation with local officials, WD&R has been used safely and without injury for the entire 117 years of its existence.

The reservoir has also been used to dispose of over 2mgd municipal sewage effluent from Wahiawa sewage treatment plant; to stock with fish for recreational fishing by community fishermen; and as a site for a walking park.

It is for all of these public purposes that Wahiawa Reservoir has become such a critical part of the North Shore and Wahiawa communities. *And it is worth observing that all of these community benefits have been provided for many years by Dole, for no compensation.*

## **II. Prior Regulation of WD&R.**

In 1963 three NOAA weathermen came to Hawaii and produced a Probable Maximum Precipitation (PMP) study for Hawaii, statewide, designated NOAA HMR 39. The study estimated the greatest probable precipitation for the Wahiawa Reservoir Watershed (WRW) at 45" in 24 hours.

However, notwithstanding HMR 39, in 1987 the Hawaii Legislature passed what became Section 179D-4(b) HRS limiting the responsibility of dam owners and operators to liability for damages arising from rain storms with a return period of not more than 250 years. The law provides:

“an owner or operator of a dam or reservoir shall not be liable for damages as a result of only natural causes such as earthquakes, (of an average recurrence interval in excess of 1000 years) hurricanes, or extraordinary rains of an average recurrence interval in excess of 250 years.” HRS Section 179D-4(b). Material in parentheses was added by Act 262 Sec.6 in 2007).

Up to 2007, DLNR regarded WD&R as a grandfathered facility, not subject to the HMR 39 PMP standard.<sup>1</sup> In fact as of 2009, DLNR Engineers continued to require Dole to maintain the reservoir water level at only 7 ½ feet below the spillway level, which required Dole to ignore the HMR 39 standard.

## **III. Discrepancies in predicted rainfall.**

In 2009 immediately after acquiring the underlying land interest, Sustainable Hawaii commissioned the first ever study to determine a 250 year rainfall for WD&R as per HRS 179D-4(b). The report was done by Dr. Pao-Shin Chu, PhD., UH Professor of Climatology, NOAA designated Hawaii State Climatologist, and specialist in extreme rainfall events on tropical islands. Dr. Chu estimated the 250 year 24 hour storm to be 19.8" but recommended design and operating standards for WD&R should be based on 22.1" of rain in 24 hours.

Notwithstanding HRS Section 179D-4(b), in recent years DLNR Engineers began requiring Dole to redesign and rebuild WD&R to meet the 1963 HMR 39 PMP. Because of the

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<sup>1</sup> “The Wahiawa Dam spillway has “grandfather” status, and there are no present requirements for improvements to the spillway from the ED. However, if this “grandfather” standing should be lifted, the spillway capacity may need to be increased from the spillway to the downstream portions of Kaukonahua Stream.” Report from 2 Element Environmental for Agribusiness Development Corporation, Sept 2007.

outdated status of HMR 39, Sustainable Hawaii once again hired State Climatologist Dr. Chu, this time, to determine what a PMP for WD&R would be. DLNR hired Applied Weather Associates (“AWA”) a mainland company, to provide an updated PMP estimate for the entire state. Both studies rendered in 2022, were expensive and highly professional. But the studies reflected very wide divergence in method, and in results as applied to WR&W. Dr. Chu, set the 24 hour PMP number for WD&R at 19.21”<sup>2</sup> AWA set the 24 hour PMP for WD&R more than three times higher at 65”. These estimates can be compared with the fact that the Dam itself has operated over 117 years, and has never experienced a 24 hour rainfall in excess of 15”. So following are all of the rainfall return period estimates for WD&R:

Source	Date	24 Hour rainfall
HMR 39 (PMP)	1963	45"
Chu (250 yr)	2009	19.8"
AWA (PMP)	2022	65"
Chu (PMP)	2022	19.21"*
Dole actual experience at WD&R	1905-2024	15"

\*Dr. Chu advised that since maximum storms often last 3 days it is better to use a 72 hour PMP which he estimated at 34.77" over 72 hours for WD&R.

The wide divergence between the Chu and AWA PMP estimates for WD&R reflects a split among authorities nationally as to the correct method for conducting PMP analysis. Dr. Chu’s 19.8" PMP estimate reflects statistical projections based on rainfall that has actually occurred in or near the affected watershed. The AWA 65" PMP estimate is based on rainfall scenarios that have not occurred at or near WD&R, but theoretically might occur.

Because of the national split of professional opinion as to correct PMP technology, NOAA stopped funding PMP analyses about 20 years ago. However recently, the National Infrastructure bill passed by Congress provided NOAA funds to complete new PMP estimates nation wide. To do these estimates NOAA first partnered with the National Science Foundation to develop a single PMP standard. The PMP Study Committee Report will be published in early summer 2024. PMP studies for the whole country, including Hawaii, will follow.

The PMP estimate for WD&R is a critical input into design requirements for WD&R and will hugely impact design and rebuilding costs. Furthermore, redesigns to accommodate more rainfall than necessary will require degrading the capacity of the dam and reservoir more than necessary.

Notwithstanding huge uncertainty regarding the correct PMP, DLNR Engineers have pushed Dole to redesign WD&R before NOAA’s authoritative PMP estimates are completed. And to be uber safe, DLNR engineers insisted on redesigning WD&R to the hyper conservative AWA PMP estimate of 65" for 24 hours..

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<sup>2</sup>Dr. Chu’s PMP study for WD&R is attached as an Exhibit.

Dole has done preliminary engineering. The cost of the Dam redesign and reconstruction based on the AWA “uber safe” standard, has been estimated at \$2million for design and \$20 million for construction. The cost is far above the entire profit Dole could make from its agricultural operations on Oahu for the foreseeable future. Thus, Dole has said Dole’s only rational course is to breach and remove the dam.

In addition, the 65" PMP requires the spillway to be lowered such that the capacity of the Reservoir would be reduced by 40%. That would be a terrible hit to the reservoir and the community. Sustainable Hawaii hopes that when the authoritative PMP from NOAA is completed that any required degrading of the reservoir will be reduced or eliminated.

#### **IV. Act 218: Dole’s Response: gift plus Act 218.**

Recognizing the critical importance of WD&R to the Wahiawa and North Shore communities, Dole has offered to gift its interest in WD&R to the State. With a great deal of community support, and support from the Governor’s office, Act 218 was passed by the Legislature to authorize acceptance of Dole’s gift and acquisition of WD&R by the State.

The State Agencies involved are Department of Agriculture, Department of Business and Economic Development, Agribusiness Development Corporation and DLNR. For the past year, agencies have been conducting due diligence required to prudently complete the purchase. Although the time involved has been substantial, the transaction is complex and there are significant governmental processes involved. In the opinion of Sustainable Hawaii, the due diligence can be completed and negotiation of the terms of transfer will commence in the summer of 2024.

However, notwithstanding the transaction in process, DLNR Safety Engineers have been insisting on redesign of the dam, and DLNR imposed heavy fines on Dole if the design is not completed. Sustainable Hawaii respectfully urges this position is counter productive.

#### **V. Sustainable Hawaii’s Recommendation and Request to the Board.**

Sustainable Hawaii thinks all involved should be working toward the goals of Act 218. We recommend that BLNR suspend, for the near future, the schedule for Dole to complete plans for the WD&R and to suspend fines. There are good reasons for this.

1. Dole proposes to withdraw from its efforts to redesign the dam, and instead to pursue breaching and removal of the dam. They are doing this to avoid further fines and engineering costs. It is their right to remove the dam, but it would be terrible for the Community.

Unfortunately Dole’s decision to breach is based on hard economics. They have stated and restated this position for 2 years. It was the reason for Act 218: Dole believes they would never recover the money they spend to upgrade the dam. Sustainable Hawaii thinks the dam will not be redesigned and rebuilt by Dole. Forcing the issue is forcing Dole to pursue breaching the dam. That is not in the Community’s best interest.

2. All agree that the dam must be maintained in a safe condition. But there is no eminent emergency related to the dam. It has functioned safely for about 119 years. No rush to judgement is required.

3. It is not practical or reasonable to require one single downsized agricultural company to bear all of the cost of transition of an older agricultural dam into an upgraded expensive flood control dam, when most of the benefits from the dam and reservoir are public benefits.

4. PMP technology is inconsistent and unreliable but finally is in the process of being fixed. However, until the new NOAA PMP studies are completed and there is an authoritative PMP, it is not prudent for anyone to spend millions of dollars to redesign or rebuild dam improvements that may be wrong before they are even finished and may unnecessarily permanently degrade the dam.

After NOAA completes its PMP study for Hawaii, it will be possible to redesign and rebuild the Dam to a known authoritative PMP standard. We believe the new PMP will probably permit a much lower cost redesign, with less degrading of the dam. That will be a big benefit to the State.

5. Dole has provided many years of public service to the community through the dam, at its own expense. Now to resolve the financial issues, Dole is donating their multi million dollar ownership in the dam which will have great long term benefit for the North Shore community. BLNR fining Dole for doing so seems like an odd response to Dole's years of community minded conduct. We respectfully suggest that BLNR should consider that Dole's contributions weigh heavily against further fines for Dole.

Respectfully Submitted:



Sustainable Hawaii, LLC

by Howard Green, Manager