MINUTES
FOR THE MEETING OF THE
COMMISSION ON WATER RESOURCE MANAGEMENT

DATE:	August 17, 2021
TIME:	9:00 am
PLACE:	Online via Zoom Meeting ID: 858 0945 9941

Chairperson Suzanne D. Case called the meeting of the Commission on Water Resource Management to order at 9:01 a.m. and stated it is being held remotely and live streamed via YouTube for public viewing due to the ongoing Covid-19 pandemic. It was noted the meeting was set to take live oral testimony and any written testimony would be acknowledged when the submittal items come up. Chairperson Case read the standard contested case statement.

MEMBERS:	Chairperson Suzanne Case, Mr. Michael Buck, Mr. Neil Hannahs, Dr. Aurora Kagawa-Viviani, Mr. Wayne Katayama, Ms. Joanna Seto, Mr. Paul Meyer
COUNSEL:	Ms. Julie China
STAFF:	Deputy M. Kaleo Manuel, Mr. Dean Uyeno, Mr. Neal Fujii, Dr. Ayron Strauch, Mr. Patrick Casey, Mr. Bob Chenet, Mr. Jeremy Kimura, Ms. Rae Ann Hyatt
OTHERS:	Mr. Kyle Barber. (Dole Foods Hawaii); Mr. Andrew Hood (Sustainable Resources Group Int'l); Dr. Leah Bremer (UH Water Resource Research Center, UH-WRRC); Ms. Kim Burnett (UH-WRRC); Mr. Chris Wada (UH-WRRC); Mr. Cliff Voss (UH-WRRC)

All copies of written testimonies submitted will be included at the end of the minutes and is filed in the Commission office and are available for review by interested parties.

081721 00:01:43

A. APPROVAL OF MINUTES

July 20, 2021

PUBLIC TESTIMONY – None

Commissioner Hannahs – noted a minor edit on page-2.

MOTION: (HANNAHS/KAGAWA-VIVIANI)
To approve the minutes with edit noted.
UNANIMOUSLY APPROVED

081721 00:02:45

B. ACTION ITEMS

1. Request and Delegation of Authority to Chairperson to Enter into a Joint Funding Agreement with U.S. Geological Survey for Statewide Hydrologic Data Collection and Water Resource Monitoring for Federal Fiscal Year (FFY) 2022

PRESENTATION GIVEN BY: Dr. Ayron Strauch, CWRM Stream Protection & Management Branch

This is an annual agreement that CWRM makes with USGS to monitor and co-fund the majority of stream gaging stations across the state.

Dr. Strauch presented a PowerPoint that focused on surface water. Because of its logistical and technical challenges, expansion of the scope in the agreement in recent years has focused on surface water. The difference in funding ground and surface water projects is that groundwater monitoring needs substantially more CIP funds to develop deep well monitoring sites and while surface water is relatively less expensive in terms of CIP.

Dr. Strauch provided some background information and noted the need for USGS Streamflow Monitoring to:

- Quantify the availability of surface water
- Understand climate change for island hydrology
- Improve accuracy of watershed modeling
- IIFS monitoring and compliance
- Peak-flow measurements for flood estimates
- Flood warning

A table of the statewide monitoring needs assessment was noted and an island-by-island map of the USGS monitoring stations of the main Hawaiian Islands was shared and explained. Contributions from other partners included: DOT, Kamehameha Schools, Mahi Pono, and USDA Forest Service. Three rainfall stations are being added to this year's cooperative agreement where USGS already monitors streamflow in remote locations. These stations will save the Agreement money due to their co-occurrence. One site each in Kaua'i, Maui and Moloka'i.

QUESTIONS

Commissioner Kagawa-Viviani – asked if there will be well-monitoring as part of this agreement?

Dr. Strauch – the Survey Branch of the CWRM groundwater team focuses on those type of monitoring. As part of the USGS cooperative agreement, CWRM also funds the collection of groundwater levels at specific locations.

Commissioner Kagawa-Viviani – request to define the other monitoring stations as well as seepage runs.

Dr. Strauch – explained on the different types of monitoring stations from the low-flow stations, continuous monitoring, real-time, and rainfall. Seepage runs are point-measurements all at the same time under low-flow conditions, at a number of different parts in the stream (*explained the quantifying conditions and analysis in relation to seepage runs*).

Commissioner Buck – thanked Ayron for the presentation and hearing about the history of it is important. Today's takeaways are relating to its funding shortfall (at full build-out of scope) and is willing to be/work on a subcommittee with Chair and Deputy to put that package together and make the ask for the funding as all monitoring type stations are critical.

Chair Case – thanked Mr. Buck for that comment and would accept assistance in putting together the justification for that and note the need for more funding and noted the reality of the departmental budget rely solely on the State budget which needs to be balanced yearly and is a set budget; also noted if the State is in a growth phase, then there's more money to be disbursed.

Commissioner Hannahs – inquired if the stakeholders and the other funding partners and recipients of water use permits to make a more reasonable contribution. Noted the watershed partnerships where taxpayer dollars are leveraged with contributions from affected parties. Asked if it was a reasonable fee to attach to a water use permit or landowners whose property traversed by these systems?

Deputy Manuel – referenced the Water Resource Protection Plan in which the Commission adopted in 2019, calls out for those that are utilizing the resource to also contribute to its protection more equitably. Is also looking at different ways to propose legislation with the assistance of CWRM's legal fellow, about collecting of fees through permits, etc., to be used for its water resource protection. We're separating it from the water use part as we're in a dual management regime with management and non-management areas. In general, we're looking at wells, development tunnels and stream diversions as a starting point for this.

Commissioner Hannahs – appreciated Deputy's comments and hoped that it would not only generate revenue but also an understanding for those who utilize the resource to be more aware of the ecological sensitivity they rely on.

Deputy Manuel – agreed and noted that he (Commissioner Hannahs) is referencing it more as regulatory fee – contributing for CWRM to collect the data in order for the user to have continued use of the resource; in which the data itself is of importance to both CWRM and the user to effectively make sound decisions.

Commissioner Hannahs – commented to share the data collectively.

Deputy Manuel – agreed

Commissioner Kagawa-Viviani – what is CWRM's in-house capacity to manage all the data – is this something that will always need to be contracted out?

Dr. Strauch – replied that this data is managed by USGS which is the benefit of this agreement; USGS takes on the burden and is shared with CWRM to utilize.

Deputy Manuel – noted on the recent loss of CWRM staff positions and is currently pushing to fill positions and increase capacity to fulfill its mandate; need assistance on advocacy to increase staff and funds to move it forward in the legislature; also commended CWRM staff for all their continued hard-work.

Commissioner Kagawa-Viviani – agreed and replied that the need to pull all the data into something cohesive for it to be more useful in decision making; touched on engaging in "citizen monitoring" where it's distributed as lower-cost but not as high-quality data but provides coverage in areas needed.

Chair Case – referred on the costs to manage annually

Dr. Strauch – reminded this is surface water, and that groundwater costs are more substantial. Referenced on the deep monitoring wells and needs of that data set as well; noted that a request for additional CIP funds for DMW have been made.

Commissioner Katayama – asked on the steady increase in costs per year.

Dr. Strauch – USGS gets a lump sum at the federal level for cost-sharing of monitoring needs and is distributed to all cooperators; the lump sum USGS receives has remained the same for twenty years. CWRM has taken on the burden of the added costs.

Deputy Manuel – added the need to increase funding to water programs such as USGS and others have been communicated to the congressional delegation. As highlighted earlier, there are private funders that do not take on the burden of cost-sharing. CWRM has also been communicating with the users regarding the benefits of having that data and encouraging new partnerships with large landowners.

Commissioner Katayama – agreed that funding and cost-sharing should be pushed more and pleased to see that other efforts have been made.

Commissioner Kagawa-Viviani – requested to be kept in loop to assist and asked on the Waiāhole Trust Fund if its only supporting Waiāhole or stream-monitoring in general?

Deputy Manuel – explained it derived from the Waiāhole contested case hearing and touched on the reasoning that the users of the ditch contribute to a pro-rata share which is tied to the quantity used, goes toward water studies, monitoring and the Waiāhole stream gages.

Mr. Uyeno – those funds are used to pay for the Waiāhole, Waikāne and Kahana stream gages, as well as Waiāhole and Kahana rain gages.

MOTION: (BUCK/KAGAWA-VIVIANI)
To approve B-1 as submitted
UNANIMOUSLY APPROVED

081721 00:46:00

B. ACTION ITEMS (CONT'D)

2. Amend Interim Instream Flow Standards For the Surface Water Hydrologic Unit of Ki'iki'i (3082), Kaukonahua Stream, Waialua, O'ahu

PRESENTATION GIVEN BY: Dr. Ayron Strauch, CWRM Stream Protection & Management Branch

Dr. Strauch stated the summary of request and noted that the Wahiawā ditch is a critical piece of infrastructure on the North Shore of O'ahu. Staff is recommending an IIFS at 2.26 mgd however, there is a new project supported by the Agribusiness Development Corporation (ADC) to remove an additional 5.1 mgd so it's unknown whether the current reservoir storage capacity can meet the ADC needs. It's important to understand the consequences of the dam safety regulations following the implementation of the IIFS.

Dole Foods Hawaii currently manage the reservoir and the dam and working towards compliance of dam safety regulations but are also looking to sell the reservoir. Depending on who operates the reservoir, the dam may be modified and future reservoir capacity is unknown.

Currently, we believe there's sufficient capacity to meet both the off and instream uses of Kaukonahua Stream.

QUESTIONS

Commissioner Buck – referred to the first (2) implementation items on the recommendations.

Dr. Strauch – clarified its standard language included in all implementation; if there's any unauthorized diversions that staff comes across.

Commissioner Buck – asked on the increase of capacity of the reservoir and its storage.

Dr. Strauch – noted with increased capacity, we'll have greater capacity to meet off-stream needs in dry periods. The reservoir is a freshwater fishery which suffers during low-flow periods due to lack of oxygen and other factors; water quality is improved with increased capacity because of oxygenation.

Commissioner Katayama – asked on the timing of the ADC new uses.

Dr. Strauch – currently, they're on the final EIS phase and still a year or two away from construction. They still need CIP monies and with other projects tied in, it's likely a 5-10 year timeline; with an estimate of 5.1-mgd of additional usage.

PUBLIC TESTIMONY

Mr. Kyle Barber, Ag Manager, Dole Food Company – the current usage is anywhere from 6 to -15 mgd and in the dry season is at max usage, from 10-15 mgd. We are mandated to keep the reservoir at 65-feet which is the capacity of the lake or the gage height. The reservoir can go up to eighty-eight feet and at eighty feet is where the spillway begins. Putting the extra 3 mgd into this stream should not be an issue for us. There is a lot of water in the lake which was built when sugar was king, we have the capacity. I was looking at the stream gages and for the last week, there's been little inflow, just under 2 cfs but is still at the 65-feet water depth. For the most part, we don't see an issue putting the 3 mgd into the stream but around the same time last year the reservoir was ten feet below, at 55-feet. That is when we start worrying about water levels mainly for the boat ramps.

The irrigation feeds over ten thousand acres of farmlands in Central and the North Shore; Dole Foods, Aloun Farms, Sugar Land Farms, ADC, Twin Bridges, and many small farmers.

We have a fishing agreement with DLNR-DAR that dates back to pre-Statehood days and been a good partner with DAR as far allowing the lake for recreational uses. However, there are regulatory issues with the reservoir, particularly the spillway. It's not compliant for today's standard which is key in huge storm event. DLNR-Dam Safety is assisting to recalculate the Probable Maximum Flow which is based on a 1962 calculation and will need to upgrade it which will be at a high-cost to us with a strict timeline imposed by DLNR-Dam Safety; we have until January 2022 to show what the new spillway will look like. It could potentially lower the lake which could have significant effect on the fishery. We are also looking at breaching the reservoir because of the high cost of the spillway construction but are assessing all options and trying to sell the reservoir as a first option. There is interest from hydro and other parties to turn it into a hydropower setup which will take a long time; longer than the four (4) months imposed by Dam Safety.

There's a lot of key players in this reservoir. It's also a huge flood-control for the North Shore; maintaining it at 65-feet, prevented flooding in Waialua from the storm on March 8th as the reservoir absorbed it and kept it from overflowing to the spillway. The flood control will go away if we lower the spillway; also, we currently take the City and County Wastewater Treatment into the lake and there is talk of ADC piping it which is a huge project to undertake but it's still in discussion phase.

QUESTIONS

Chair Case – reiterated on the flood control issue as it's to control volume

Commissioner Buck – asked if the hydro will be a pump storage issue or just where the water is flowing from?

Mr. Barber – Dole doesn't have interest in doing hydro but has an interest in keeping the reservoir for irrigation, but the irrigation water cannot pay for the $20 million plus for the spillway; haven't heard much from the hydro guys on their plans for it. Our intent is to find someone to buy the reservoir and develop it.

Commissioner Meyer – asked on what the new uses will be in the near future.

Mr. Barber – we know that ADC has purchased a lot of acres of land that is serviced from this Wahiawa ditch and a lot of those acres will open for diversified farming as ADC finds tenants to farm. The only thing can change is that the reservoir is now classified as R-2 water because Wahiawa Treatment Facility currently does not have onsite storage so when there's power outages, they will dump semi-raw sewage into the lake and are awaiting to get the R-1 classification.

Chair Case appreciated the preliminary briefing at the last meeting giving participants and the public a chance to better understand the subject matter and asked for a motion.

MOTION: (KAGAWA-VIVIANI/MEYER)
To approve B-2 as submitted.
UNANIMOUSLY APPROVED

RECESS: 10:05 AM

RECONVENE: 10:15 AM

081721 01:15:46

B. ACTION ITEMS (CONT'D)

3. Approval of the Stream Channel Alteration Permit Application (SCAP.5687.2) by the Hanalei Traders, Inc., for the Biowall Stabilization Project, Hanalei River, Hanalei, Kaua'i, TMK: (4) 5-5-010:067

PRESENTATION GIVEN BY: Mr. Dean Uyeno, CWRM Stream Protection & Management Branch

Mr. Uyeno touched on the summary of request and provided some background information of the submittal and briefed on the project description. Agency comments were received from Kaua'i Department of Public Works on the proposed improvements which will need to comply with the County's Flood Plain Management Ordinance No. 831. CWRM concurs and added it as a special condition to this SCAP. Comments were also received from Department of Hawaiian Home Lands, DLNR-Division of Forestry & Wildlife, and U.S. Fish & Wildlife, in which CWRM staff concurred and added special conditions; no public comments were received.

There are no anticipated impacts to traditional and customary practices or the upstream/downstream migration of native macrofauna due to the project's limited impacts to the stream bed. The action triggered an environmental assessment pursuant to HRS §343-5(a), due to the use of State lands. The staff review and recommendations were stated.

QUESTIONS

Commissioner Hannahs – asked does the watershed group in Hanalei have a strategic plan in managing the hau bush?

Mr. Uyeno – have not heard of any current efforts or plans.

Commissioner Hannahs – we can't expect that of the property owner but there needs to be some approach in dealing with the root problem.

Mr. Uyeno – agreed; and noted efforts to remove the hau at other various stream sites; and can reach out to the Hanalei Hui if there are plans to move forward with clearing the hau.

Commissioner Kagawa-Vivani – who's thinking of the geomorphology of the whole river given its flooding issues and hardening.

Chair Case – noted the property across the bank is private property with a lot of hau encroachment and know that below the highway, it's a big issue which suffered considerable flooding. Perhaps reinforcement of the left side streambank might slow the encroachment of the hau.

PUBLIC TESTIMONY

Mr. Andrew Hood, Sustainable Resources Group – I'll speak to the question of the hau bush and the Hanalei Watershed Hui's involvement in this project and other projects that are potential to advance the issue of hau bush encroachment into the river corridor.

To answer the question of how the bio-wall may or may not affect the hydrodynamics of the river - we ran a sophisticated hydraulic model using very detailed data. In short, the bio-wall will not change downstream velocities that will adversely affect the stream. It's a soft engineering design meant to hold the bag material up against the bank. It will also have the benefit of reducing the amount of sediment that falls into the bank during high flows and with the vegetation we're putting in, it will also enhance habitat for native waterbirds.

Regarding the hau bush, that issue has been going on for decades where encroachment into the Hanalei River and determination for who the responsible parties are, has been an issue and debate with a lot of back and forth. At present, the Hanalei Watershed Hui supports this project and there are ongoing efforts by Department of Transportation to remove hau bush upstream on the same side of the river, with the most egregious encroachment being across the river on private property. There are years of ongoing dialogue with the landowner to address the issue, but it has fallen on deaf ears.

We will be conducting a very detailed hydraulic and hydrologic analysis of the Hanalei River watershed with intent is to evaluate the potential strategies to mitigate flooding. One of the strategies will be the removal of hau bush utilizing detailed hydraulic models. To date, there have not been efforts looking at how changes to the floodplain, inclusive of the river corridor hau bush, or other alterations affect the hydrodynamics.

We're very optimistic and it's a community-based project. We know the removal of hau bush will increase recreational usage and free passage on the river way as presently, it is choked up and provides minimal passage for the canoe club and other users of the river. It is being looked at in a large holistic sense of an evaluation.

Regarding the DHHL comments with respect to the loʻi that's upstream and across Kūhiō Highway, DHHL stated their farm would be in the impacted area, but that's not correct. The project area is significantly far away. There will be no changes with their ʻauwai to the river or any impacts that would require special consultation. I'm willing to do it, but in my opinion, it was incorrectly stated.

With respect to evaluating the geomorphology of the river corridor subsequent to the April 2018 flooding, there's been all full-scale change of the course of the waterways other than the banks that have eroded. If this goes through and we do get funding to implement the project, we will be on site pursuant to our permits, looking at cross-sectional impacts to the river and water quality impacts.

Lastly, speaking to DHHL comments on consulting with Kauaʻi County and DOT, we've done both, and in no way would impede the DOT transport they established and we wouldn't want to start our project until all that (DOT) roadwork is done.

I'm more than willing to do the work but wanted to speak to the conditions of the permit.

QUESTIONS

Commissioner Katayama – is there any plan to reclaim the property that is lost due to erosion?

Mr. Hood – replied, no.

Commissioner Katayama – will the construction be entirely at the present bank location?

Mr. Hood – yes.

Chairperson Case asked for a motion to approve the item as submitted.

MOTION: (HANNAHS/KATAYAMA)
To approve B-3 as submitted.
UNANIMOUSLY APPROVED

081721 01:41:40

C. INFORMATIONAL BRIEFINGS

1. Presentation by Water Resources Research Center - Groundwater Management for People and Ecosystems Under a Changing Climate: Insights from the Puʻuloa (Pearl Harbor) Aquifer

Mr. Jeremy Kimura, CWRM Planning Branch introduced the item and Dr. Leah Bremer of UH Water Resource Research Center

PRESENTATION GIVEN BY: Dr. Leah Bremer of UH Water Resource Research Center

Dr. Bremer shared a PowerPoint presentation on the submittal item focusing on the sustainable yield of the Pu‘uloa-Pearl Harbor aquifer in the context of protecting wells for public water supply while also protecting and restoring spring flow and incorporating changes in groundwater recharge due to future climate and landcover change(s).

The Pearl Harbor aquifer supplies 2/3 of O‘ahu's drinking water with the current SY set at 182 mgd with current pumping at 117 mgd which will increase with future demands.

The groundwater optimization simulation and spring flow and groundwater pumping diagrams were shared and explained. SY is a societal decision that can benefit from linking pumping to changes in spring flow which directly impacts public trust uses, wetlands, lo‘i kalo, watercress, and other spring fed agriculture.

Land cover and climate change scenarios/examples were given which roughly follows the City & County of Honolulu’s Transit Oriented Development study. Under climate change, pumping will need to decrease to avoid adverse impacts. Preserving the native forests will help to prevent losses of 8-10 mgd in sustainable yield which translates to helping to reduce substantial water supply costs in the long run; more ecohydrology research is needed to understand the role native forests protection play in climate resilience.

QUESTIONS

Commissioner Buck – was there any work or data on estuary or run off in the ocean as far as public trust resource or if there was a groundwater model in West Hawai‘i on groundwater dependent ecosystems?

Dr. Bremer – submarine groundwater discharge is a big component of this, and we focused on the spring flow in Pearl Harbor. For the ‘Ike Wai study, our other study site is West Hawai‘i island and developed a model that answered similar question and the focus there is submarine groundwater discharge and links to groundwater dependent ecosystems.

Commissioner Buck – I know we're not going to convert all the non-native forest to native but think it's important for the model to look at reforestation opportunities and how they might impact recharge.

Dr. Bremer – acknowledged that and are clear with the uncertainties involved with some of these efforts to understand how forest management affects water supply. For this region, perhaps if we work with more stakeholders in the lower elevation areas thinking of the watershed management in the Ko‘olau’s in Pu‘uloa aquifer, the main management issue seems to be the protection of remaining native forest from invasion; particularly on other islands, I agree thinking about restoration as well. Dr. Kagawa-Viviani can talk more of the ongoing challenges in the need to get more field data and bring it to the watershed scale. At the same time, we can’t wait for the perfect data but need action now using the best available data but being clear of the uncertainties.

Chair Case – have you shared this information with the Board of Water Supply and understand they notified the Invasive Species Committee and the watershed partnerships that they will not be able to fund forest management this year, which is a big concern. I know on other islands there's significant participation in forest management by the boards of water supply and concerns me if the BWS isn't seeing this connection and importance of funding in protection of the forest as your study makes it clear that the biggest difference is forest protection.

Dr. Bremer – we emailed Barry the study and talked with BWS throughout the 'Ike Wai project in different ways and can make more of an effort to share that with them.

Commissioner Kagawa-Viviani – noted the studies focused on the supply side and wondered if other mechanisms for reducing demand like recycling of water was explored. Also noted that it is not well characterized for Pu'uloa because of the military and the lack of access for the studies.

Dr. Bremer – replied we did not for this particular study but there are folks at UH working on that and agreed to think of the supply and consumption side as well as the distribution.

Commissioner Kagawa-Viviani – appreciated the presentation and noted that Pearl Harbor Aquifer was the most studied dating from the 1980s but still don't really understand it given the position we can with the population on O'ahu and looking at urban hydrology.

Commissioner Seto – thanked Dr. Bremer for the presentation and will forward this link to Department of Health, Pollutant Run-off Control Program as well as the Safe Drinking Water Branch, to see if there's funding opportunities to support the native forestation and keeping our water safe.

Commissioner Katayama – asked on the impact of reducing the sustainable yield from 182 mgd to 127 mgd regarding the community development plans as it is a significant change as the current pumping of 117 mgd is near that edge.

Dr. Bremer – we looked at water consumption estimates by the BWS into the future, and those will exceed what we're suggesting for the sustainable yield of the aquifer; and the questions is - can we reduce consumption through reuse and recycling? We also looked at desalination which is costly.

Commissioner Katayama – asked how quickly do we get from 117 mgd to 127 mgd?

Dr. Bremer – I believe the BWS projections to 2040 were 0.3-0.59% per year, but the projections are in our study and show that by 2040 it will go above the 127 mgd.

Mr. Chris Wada (UH-WRRC) – clarified that the study took the BWS projections for water use and under the most probable lower-use projection (of the model), it would be after 2040 that it would hit the 127 mgd mark; if the higher-range is used, it will hit the 127 mgd at the year 2030. The challenge with the groundwater model is that it wasn't projecting SY in every period leading up to the end of the model horizon. (*explained about the model's analysis in regards to SY projections*)

Deputy Manuel – highlighted that the 117 mgd is the current pumping average and is within a water management area and the permitted allocation maybe permitted above the 117 mgd, and the Commission may have already allocated over the 127 mgd in the Pearl Harbor Aquifer which is concerning (*noted that the following presentation will highlight on the end user conversation of this topic*). Questioned on strategies for end users to reduce consumption to protect water availability.

Dr. Bremer – cautioned against getting tied to the 127 mgd as its keeping spring flow as it is now and is not taking into account climate change. It's the idea of the 182 mgd is way too high and further thinking of what it needs to come down to and being realistic of the uncertainties. *Reiterated the 127 mgd is protecting the current spring flow under current conditions.*

Commissioner Hannahs – is there a way in our policy to set sustainable yield that is conditioned on contribution to improve land cover?

Deputy Manuel – the Commission has broad authority and sustainable yield is defined within the Water Code. For example, in Waipahu and Waiawa, permit allocations are based on salinity and not necessarily withdrawals. The Commission has adopted SY that consider various metrics and thresholds; so, the Commission could entertain alternatives to the RAM model, but we (CWRM) would want to evaluate that and its implications, but it's well within the Commission's authority. One way we could start that comprehensively is in the Water Resource Protection Plan and identify what is it that the Commission wants to sustain?

How we plan and project our water needs and what we want to manage as a Commission is important. What's the vision for this Commission? Once we determine that, we'll get into the specifics of the "how" but need to figure out what is it we want to sustain - and incorporate that into the sustainable yield.

Dr. Kagawa-Viviani – did you assign SY to the specific aquifer systems – Moanalua – Waimalu; Waipahu-'Ewa Kunia?

Dr. Bremer – yes, we have that information and have that aggravated by sub-aquifer unit (*explained the model*).

Dr. Kagawa-Viviani – if the study team saw ecosystem improvements after the closure of raw sugar?

Ms. Kim Burnett (UH-WRRC) – added that figure #8 shows the changes in sustainable yield per sub-aquifer which could be calculated from that. (*sent link to studies via Zoom chat*)

Engels JL, etal., 2020, Collaborative research to support urban agriculture in the face of change: The case of the Sumida watercress farm on O'ahu.
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0235661

Elshall AS, etal., 2020, Groundwater sustainability: a review of the interactions between science and policy. (review on sustainable yield)
https://iopscience.iop.org/article/10.1088/1748-9326/ab8e8c/meta

Bremer LL, etal., 2021, Effects of land-cover and watershed protection futures on sustainable groundwater management in a heavily utilized aquifer in Hawai'i (USA). (study on incorporating climate and land cover change into SY estimates)
https://link.springer.com/content/pdf/10.1007/s10040-021-02310-6.pdf

Burnett, KM, etal., 2020, Incorporating Historical Spring Discharge Protection Into Sustainable Groundwater Management: A Case Study From Pearl Harbor Aquifer, Hawai'i. (study on incorporating spring flow into SY estimates)
https://www.frontiersin.org/articles/10.3389/frwa.2020.00014/full

University of Hawaii Economic Research Organization (UHERO), Groundwater management for people and ecosystems under a changing climate: Insights from the Pu'uloa aquifer
https://uhero.hawaii.edu/groundwater-management-for-people-and-ecosystems-under-a-changing-climate-insights-from-the-pu%CA%BBuloa-aquifer/

Hawai'i County DWS to help prioritize investments in watershed protection for GW recharge including in Keauhou:

Report for Hawai'i Community Foundation:
Identifying Areas of Cost-Effective Watershed Management for Groundwater Recharge Protection on Hawai'i Island.
https://uhero.hawaii.edu/wp-content/uploads/2019/07/HCF2019_WatershedManagement.pdf

Report for Hawai'i County DWS:
Identifying Priority Watershed Management Areas for Groundwater Recharge Protection on Hawai'i Island.
https://uhero.hawaii.edu/wp-content/uploads/2020/05/DWS2019_051120.pdf

Publication in Journal of Environmental Management:
Priority watershed management areas for groundwater recharge and drinking water protection: A case study from Hawai'i Island
https://www.sciencedirect.com/science/article/pii/S0301479720315474

Chairperson Case appreciated the presentation of the report on the studies as it serves of great importance to water resource protection.

081721 02:24:48

C. INFORMATIONAL BRIEFINGS

2. Pearl Harbor Water Shortage Plan Update

PRESENTATION GIVEN BY: Mr. Jeremy Kimura, CWRM Planning Branch

Mr. Kimura gave a PowerPoint presentation and note the Pearl Harbor Water Shortage Plan was adopted on August 18, 2020. There are (3) water shortage stages with corresponding actions triggered by different things. In the (1) first water shortage stage, action is triggered when there is a USDA drought declaration or a negative one standard deviation in measurement of water levels for (2) quarterly measurements in one or more of CWRM deep monitor wells. In the water shortage alert stage, action is triggered when there is BWS declaration of low groundwater conditions or when there is a negative 2standard deviation from average water levels in one or more CWRM Deep Monitor Wells for 3 monthly measurements. For the water shortage warning stage, an action is triggered by negative 3 standard deviations from average water levels in one or more CWRM Deep Monitor Wells for 2 monthly measurements.

The Permit classifications are grouped by priority levels that's categorized with the stages, noting the percentage of cutbacks for use. Note: The Honolulu Board of Water Supply is the largest user in the Pearl Harbor Aquifer sector. The Post-adoption actions by CWRM staff were briefed on ensuring an adaptive management water-shortage plan is used.

2A. PHWSP Trigger Chart Updates

PRESENTATION GIVEN BY: Mr. Patrick Casey, CWRM Groundwater Branch

Mr. Casey gave a Power Point presentation noting the six (6) deep monitoring wells in the Pearl Harbor Aquifer that are monitored on a quarterly basis. A map of the well area was shared and a graph of the history of the daily average water level elevation was shown and explained. The deep monitor well data, in regard to brackish and saltwater can also be located on CWRM's website. The graph of the deep monitor well water tables was shown and explained in relation to the fresh and brackish water lens of the well.

QUESTIONS

Chair Case appreciated the briefing and also the hard-work of the monitoring of the wells.

Commissioner Hannahs – what would be the effect on sustainable yield if the Halawa aquifer were to be impaired by the Red Hill Fuel storage?

Mr. Casey – it would be significant; but depending on the severity and response how the military will deal with that potential.

Deputy Manuel – one of the follow-ups were requesting is that DOH (Ms. Seto) offered to present an update (September) to the Commission as the department representative to this Commission. It'll be better to have all that information presented during that time.

Commissioner Hannahs – yes, they relate and in doing our jobs, we have to recognize risk and if something is put at risk, you adjust your expectations and at worst case, accommodate the risk and may also attach that risk to the offender. It may affect the military in terms of how we treat prioritization and the level of reductions required.

Commissioner Meyer – that is the gorilla in the room. I have some experience with diesel spill in an aquifer which is a horrendous problem to mediate and having a presentation at the next meeting would be ideal. It certainly impacts the analysis and data of what we listened to.

Commissioner Kagawa-Viviani – asked on the mean of the water shortage triggers.

Mr. Kimura – the mean is based on record of the deep monitor well as some records (history) date back longer than others; but there's some limitations.

Commissioner Kagawa-Viviani – wanted clarification on the percentage of reductions regarding impact and in creating a tiered system that reflects the Water Code priorities.

Mr. Kimura – the tiered categories were structured according to public trust uses (*explained the tiered analysis*); the Code requires a Water Shortage Plan for every water management area in the State, with this being the first. In the event of a shortage, if the largest user (BWS) can cutback 10% of their use, that's more than 15% of all the lower tiers. Therefore, will that reduce the aquifer stress enough to rescind the water shortage conditions? (*further explained the reduction analysis and the comprehension of it*)

Commissioner Kagawa-Viviani – do we know how much water is consumed through leakage because of aging infrastructure?

Mr. Kimura – a separate effort currently ongoing is the Water Audit Program; looking at a standardized way how water systems are using water, where it's going, and where losses might be. Statewide data for municipal water systems shows a loss of hundreds of millions of gallons a year that possibly could be recouped. Our Deputy (Manuel) would say, our (CWRM) job is to balance the efficient use of resource with protecting that resource; efficiency is key.

Deputy Manuel – commented that the Water Audit is due/reported yearly and ideally want to share that information with the Commission noting on what we (CWRM) are doing to address efficiencies or inefficiencies of system losses as the program highlights inefficiency results to loss revenue. An update of the Water Audit will be presented to the Commission in the near future, which will tie the presentations and data sets together.

Commissioner Kagawa-Viviani – if we're seeing declines in the wells, was that usage based on last year – what is the trend in times from our supply or rainfall to the wells (in relation to the trigger)-how long is it going to take for the wells to recover?

Mr. Kimura – (*explained the trigger analysis in relation to rainfall and well location*) – noting that is why the changes in the transition zone was not used in the planning because of its lag time – (*further explained the reasoning of the trigger and action affect*). The lag time varies in different places – Pearl Harbor Aquifer is the better studied area (*gave examples of*

the spring flow studies with USGS). The deep monitoring well data is monitored and controlled by CWRM staff and drives the Commission for decision making.

Mr. Neal Fujii (CWRM, Acting Planning Branch Chief) – added on the reason why water levels were chosen is because it is practical and expedient; there's no other indicator that's as responsive compared to other data sets and there's not enough salinity data to make proper decisions on that as was shown in the graph of Mr. Casey's presentation – probably a response combination of rainfall and pumping.

Added that the Pearl Harbor Water Shortage Plan has been adopted by the Commission but have opportunity to enhance or modify for improvement. The water cutback scenarios were based on various percentages and how those impact the different categories.

Deputy Manuel – reiterated on why the prior presentation is relevant to this conversation. This plan was adopted last year and heard from community or in the presentation testimony asking for more community outreach. Comments were received noting the Plan is lacking on impacts to springs, therefore traditional and customary practices.

In that context Jeremy highlighted, the current sustainable yield as designed, focused on impact to well-development and the quality of water and wells and managing the withdrawal; with the assumption that 50% of natural recharge is sufficient to protect traditional and customary practices. There's already impact to T&C systems and resources, and we are just managing what currently exists. Regarding climate change projections, reductions and recharge as presented prior, we must keep all these in mind as we're managing the resources.

Reiterated that the Commission always has the authority in the Code to consider other factors and if there's an emergency or other triggers as more data comes up, that this be a living document that we adaptively manage our resources and are committed to continue to broaden our horizon to incorporate needs of all of our users while upholding the public trust.

Reminded this is the first Water Shortage Plan created since the passage of the Code in 1987 which states explicitly that we need a Water Shortage Plan for all Water Management Areas.

Chairperson Case appreciated the summary and the discussion of the forward and broad thinking and thanked staff for their presentation.

Commissioner Kagawa-Viviani noted the written testimony with comments received by Ms. Sandy Ward of Mālama Pu`uloa (Restoring Pearl Harbor) Program regarding the need of more community outreach and offered (on behalf of UH-WRRC) her assistance.

Deputy Manuel noted CWRM will follow-up with Ms. Ward regarding community engagement and if warranted, recommend amendments to the Commission.

E. NEXT COMMISSION MEETINGS (TENTATIVE)

September 21, 2021 (Tuesday)

October 19, 2021 (Tuesday)

This meeting was adjourned at 12:06 p.m.

Respectfully submitted,

Rae Ann Hyatt

RAE ANN HYATT
Secretary

OLA I KA WAI:

M. KALEO MANUEL
Deputy Director

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Written Testimonies Received:

Aloha Kākou,

Note: I sent a letter from our non-profit regarding the Pearl Harbor Water Shortage Plan to the Honorable Suzanne Case on June 11th, 2021, and never received a reply or acknowledgement of receipt. I am submitting the contents of that letter as testimony at this time as the Pearl Harbor Water Shortage Plan is on the agenda of tomorrow's meeting and would be grateful for confirmation that our testimony was received.

Re: Comments on the Commission on Water Resource Management Pearl Harbor Water Shortage Plan Draft Final dated June 15, 2020

Hui o Ho`ohonua is a community networking stewardship non-profit operating in the `Ewa Moku since 2015 and engaged in the restoration of the shoreline of Pu`uloa (Pearl Harbor). We are currently under contract with the Hawaii Dept. of Land and Natural Resources, Division of Aquatic Resources (DLNR-DAR) for a flood mitigation project in the Honouliuli Stream and partnered with DLNR-DAR on a National Coastal Wetlands Conservation grant to expand our work to 28 acres of the Pu`uloa Shoreline. Our hui works with multiple stakeholders in the area including the U.S. Fish and Wildlife Service, the `Ewa `Āina Education and Steward Network, and members of the Pu`uloa Strategic Partnership.

The Commission on Water Resource Management Pearl Harbor Water Shortage Plan Draft Final dated June 15, 2020 was brought to our attention via participation in the recent International Tropical Waters Island Conference; we have spent significant time reviewing its content and are writing to you to express our concerns. We concluded that:

- Hawaiian cultural integration and indigenous ecological knowledge and perspective are absent from the plan. Specifically, the plan does not address protection of Hawaiian rights in relation to surface or groundwater shortages that impact traditional food systems (loko i`a and lo`i kalo).
- The plan does not address mitigation of surface water sources, nor native ecosystems that recharge ground water in the `Ewa moku surrounding Pu`uloa. Anticipated water shortages will limit access to "healthy" sources of water, exacerbating equitable food and water security problems for the entire island. Healthy wetland ecosystems are key to water resource management.
- There is no evidence of adequate community outreach for review and commentary on the plan nor a list and category of stakeholders consulted

We are asking the Commission on Water Resource Management to consider:

- Extending the period for public review and commentary for up to one year, and we are willing to provide assistance in implementing community outreach for such a purpose—specifically targeting those engaged in traditional Hawaiian resource management in the region.
- Working with our non-profit and our network of stakeholders to develop a comprehensive plan to address and mitigate sources of ecosystem degradation and water pollution that have and continue to severely impact watersheds in the region.

Mahalo for your consideration and we would be grateful for a written response to our concerns and requests.

Sandy Ward
Executive Director
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