MINUTES
FOR THE MEETING OF THE
COMMISSION ON WATER RESOURCE MANAGEMENT

DATE: January 19, 2021
TIME: 9:00 am
PLACE: Online via Zoom
Meeting ID: 957 5828 3582

Chairperson Suzanne D. Case called the meeting of the Commission on Water Resource Management to order at 9:04 a.m. and stated it is being live streamed via YouTube for public viewing due to the ongoing Covid-19 pandemic and 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 also read the standard contested case statement.

MEMBERS: Chairperson Suzanne Case, Dr. Kamana Beamer, Mr. Michael Buck, Mr. Neil Hannahs, Mr. Wayne Katayama, Mr. Keith Kawaoka, Mr. Paul Meyer

COUNSEL: Ms. Lauren Chun

STAFF: Deputy M. Kaleo Manuel, Mr. Roy Hardy, Mr. Dean Uyeno, Mr. Ryan Imata, Dr. Ayron Strauch, Ms. Rae Ann Hyatt

OTHERS: Ms. Diane England, (Engineering/Remediation Resources Group, Inc., ERRG), Mr. Andy Huang (Naval Facilities Engineering Systems Command, NAVFAC), Ms. Sara Coffey (NAVFAC), Mr. Tom Nance (Water Resource Engineering), Mr. Brian Lee (Water Resource Engineering), Mr. Ernest Lau (Board of Water Supply), Mr. Barry Usagawa (Board of Water Supply), Mr. Frederick Reppun (He‘eia National Estuarine Research Reserve), Dr. Kawika Winter, (He‘eia National Estuarine Research Reserve), Ms. Hi‘ilei Kawelo (Paepae O He‘eia), Mr. Kanaloa Bishop (Paepae O He‘eia), Mr. Kanekoa Schultz (Kāko‘o ‘Ōiwi), Mr. Scot Izuka (U.S. Geological Survey, USGS), Ms. Chui Ling Cheng (USGS)

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.

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A. APPROVAL OF MINUTES

December 15, 2020

PUBLIC TESTIMONY – None

MOTION: (KATAYAMA/BEAMER)

To approve minutes as submitted
UNANIMOUSLY APPROVED
(CASE/BEAMER/BUCK/HANNAHS/KATAYAMA/KAWAOKA)

011921 00:07:25
B. ACTION ITEMS

1. Request for Approval of a Well Abandonment Permit and Variance from 2004 Hawaii Well Construction and Pump Installation Standards Hickam AF Base Well (Well No. 3-2057-004), TMK (1) 9-9-001:013 Waimalu Aquifer System Area, Pearl Harbor Aquifer Sector, Oahu

PRESENTATION GIVEN BY: Mr. Ryan Imata, CWRM Groundwater Branch

Mr. Imata provided the summary of request and explained that ERRG, the consultant, is requesting the variance on behalf of the Well/Landowner. By law, Well Abandonment Permits are only issued to a C-57 licensed well driller. Therefore, approval of the permit and variance will be issued to the licensed driller, Valley Well Drilling.

Mr. Imata summarized the background and timeline information and explained the well design and location. For the well design, annular space grouting is important for two reasons. First, it helps to prevent contaminants from entering the ground water from the surface. Second, it helps to prevent co-mingling of different aquifers if there is a cross connection. In this case, there is some indication that it was an artesian well, though apparently there's no surface leakage, nor does there appear to be leakage around the annular space coming to the surface.

Mr. Imata stated and explained the two variance requests which are: a) casing perforation variance and b) depth of grouting variance. The consultant has provided a video log of the well but very little could be seen because of the murky nature of the water. However, there does not appear to be any flow up the casing, which indicates no artesian flow. The well is in a protected well house and away from runoff or surface contaminants. Staff believes that there is not a significant threat of surface contamination, or waste of artesian water associated with an unsealed annular space, in accordance with Section 3.7(b) quoted above, therefore staff does not recommend that the Commission require perforation.

This project generates no EA triggers nor are any Traditional and Customary practices affected. Action is also consistent with the Hawai'i Water Plan. Mr. Imata then stated the staff's recommendations.

QUESTIONS

Commissioner Buck – asked if this item normally comes before the Commission or is it perforation for the casing as it seems like an administrative item.

Mr. Imata – we discussed this among staff and feel these are engineering type of questions that are technical and I think should be administrative. At the same time, the way the well standards are written, variances need to come to the Commission as we have standards to

protect the aquifer. It's a good question and maybe we need to look at evaluating the standards or delegating authority to the Chair to approve certain deviations.

Commissioner Buck – appreciated response and agreed an item as this could be delegated to the Chair.

Commissioner Hannahs – asked regarding the basis of the historic building of importance (the well house)

Mr. Imata – deferred to the Navy for comment but replied due to the age of the building but did not know.

Chairperson Case called upon Department of Navy for comment

Mr. Andy Huang (NAVFAC) – replied he would need to get back to Ryan to see what the Secretary of the Interior standards was used to make that determination, but the 50-year rule seems logical to me.

Commissioner Hannahs – so as I understand, just because its 50-years or more it's of importance?

Mr. Huang – it's one of the criteria we use to determine whether a facility is historic or not.

Commissioner Hannahs – asked does your designation have a process for reconsideration in the event we wanted to have a well drilled there, is there a process for review?

Mr. Huang – answered would need to consult with State Historic Preservation and would need an agreement from them to alter the structure, so there's a process in place.

Commissioner Hannahs – it maybe more relevant in other areas but thank you.

Commissioner Kawaoka – asked where is this well located in relation to the UIC line?

Mr. Imata – replied the UIC line runs along Nimitz Highway and converts to Kamehameha Highway and is well below the UIC line.

Commissioner Kawaoka – so it's Makai?

Mr. Imata – replied yes.

Chair Case – for the record the UIC line is?

Mr. Imata – Underground Injection Control Line

Commissioner Kawaoka – was there discussion's with DOH besides Safe Drinking about ongoing investigations in that area?

Mr. Imata – replied no.

Commissioner Katayama – in granting the variances, what is the recourse in the event that the presumptions of safety are not met or breeched, is there a process or outreach on that?

Mr. Imata – if there's any hydrogeological question I had, or concerns about anything, I would've written it into the variance request. Not specifically for this one, but for other variance requests, I would've written in where there is some uncertainty to provide additional information before proceeding with our variance. With this, I think the answer is no, we grant the approval and let them do it and close it up.

What happens if we find Artesian leaking, we can certainly ask them to do additional work. I feel confident the surface investigation done, sufficiently answers my questions.

Commissioner Katayama – I think it's important whenever you grant a variance to have that level of comfort especially when you're exceeding the standards.

Commissioner Beamer – I trust your judgement and observation we have these standards for a purpose and if we're granting a variance there needs to be a real case as to why we should do that; but what are the potential issues-are we worried about saltwater intrusion for instance or excess releasing of drinkable water? In other cases before us, sometimes a leak in one area affects other parts of the springs and aquifer.

Mr. Imata – the well has been in existence since 1948, and the granting for approval of the variance is to not perforate the casings so they're not pumping grout into the annular space and also to not grout all the way to the bottom. My thought is if there was anything negatively impacted, I would think the impact is already happening and I don't have evidence there is a negative impact attributed to the annular space not being grouted. Having said that, I think the Commission granting the approval for the grouting would not make anything any worse; granting it would make it better as there still will be protection within that 15-feet of grouted casing.

Mr. Roy Hardy (CWRM Groundwater Branch Chief) – regarding Commissioner Beamer's concern on losing fresh water and to clarify this isn't a basal well. It's not in the basaltic geology, it's in the caprock. <Mr. Hardy explained the difference of caprock and basal wells and the geology of the areas in relation to the wells; also explained the significance of the UIC line in conjunction with the well(s)>

PUBLIC TESTIMONY - None

Chairperson Case asked the Commissioners for a motion for item B-1 as submitted

MOTION: (HANNAHS/KATAYAMA)
To approve B-1 as submitted.
UNANMIOUSLY APPROVED
(CASE/BEAMER/BUCK/HANNAHS/KATAYAMA/KAWAOKA)

Chairperson Case called a recess due to Commissioner Meyer's technical issues

RECESS: 9:35 AM

RECONVENE: 9:48 AM

011921 00:48:04

2. Request Approval of Applications for A) Ground Water Use Permit (GWUP) No. 01096 - Existing Industrial Use for 1.901 mgd and B) Well Construction Modification and Pump Installation Permits for Existing Yacht Harbor 1, 2 and 3 Wells (Well Nos. 3-1750-012, 3-1750-013 and 3-1750-022, respectively) and Yacht Harbor Monitor Well, 3-1750-023 TMK (1) 2-3-036:039, Nu'uanu Ground Water Management Area, O'ahu

PRESENTATION GIVEN BY: Mr. Ryan Imata, CWRM Groundwater Branch

Mr. Imata provided the summary of request and summarized the background information. Since 1973, the wells have been used for the air conditioning system for the Yacht Harbor Towers.

Mr. Imata also explained the seven (7) criteria that must be met to obtain a water use permit which are: 1) water availability, 2) reasonable-beneficial use, 3) interference with other existing legal uses, 4) public interest, 5) State & county general plans and land use designations, 6) County land use plans and policies, and 7) interference with Hawaiian Home Lands rights.

Based on questions and answers, staff does not feel that there are practicable alternatives available to applicant for the use of salt water. Overall analysis, staff finds the use of salt water for industrial cooling purposes to be reasonable and beneficial. There have been no public comments or objections to this application. This application meets the county land use plans and policies and that approval of this permit will not interfere with Hawaiian home lands rights. This triggers no EA nor will traditional or customary practices be affected.

The staff recommendations were then stated and explained.

QUESTIONS

Commissioner Kawaoka – asked regarding the NPDES permit if it was discussed with DOH Clean Water Branch and any other related issues if this permit is approved.

Mr. Imata – stated did not discuss with the Clean Water Branch regarding impacts and Well 3; also did not find anything of an issue relating to the permit.

Commissioner Kawaoka – I think its worth-while to talk to either Darrell or Shane as NPDES permits take a while.

Mr. Imata – agreed.

Commissioner Hannahs – agreed with Commissioner Kawaoka's comments and referred to the current wells discharge into the Ala Wai canal.

Mr. Imata – noted it does discharge into Ala Wai and held a previous NPDES permit for that.

Commissioner Hannahs – noted on the two developed injection wells on their purpose.

Mr. Imata – referred answer to the consultants

Commissioner Hannahs – referred these as DOH issues; and noted on the importance of conferring with DOH in regards to the necessity of injection into the Ala Wai and the reasoning of the development of the injection wells to begin with.

Mr. Imata – I don't want to speculate

Commissioner Beamer – commented it is an important technology regards to energy efficiency and it's a good idea and asked if the water injected contains brine or other toxic substance.

Mr. Imata – my understanding is the heat exchange system is a closed loop system so whatever comes out of the ground goes back in (referred to the Hu Honua injection wells and process and referred the engineering <design> part of it to Tom Nance)

Chair Case – noted on the public interest section relating to it being a renewable energy system that if it works right and doesn't have significant impacts, it's a great substitute for cold ocean water instead of burning oil.

Commissioner Buck – commented on other downtown (Honolulu) salt-water projects that were proposed are now not being funded and was curious on the funding and pursuing of the project.

Commissioner Hannahs – (to Tom Nance) asked on the purpose of drilling the injection wells.

Mr. Tom Nance (Water Resource Engineering) – replied the two wells have issues with temperature and once in a while one of the nutrients exceeds the limit of the NPDES permit.

Commissioner Hannahs – I understand why you want to replace the current wells that provide the water, but why were the injection (wells) drilled?

Mr. Nance – essentially with the wells that were there as supply, they couldn't meet all requirements of the NPDES to dispose water into Ala Wai; we looked at on-site disposal wells to make the NPDES permit no longer be a requirement; but long-term disposal wells is a question and concern (explained the concept of the water content in relation to "disposing water" and the capacity of disposal wells diminishing over time).

Commissioner Hannahs – it's clear to me it's a superior source for supplying the water and want to make sure we're not creating a problem with the disposal of the water with instead of injecting it, continuing to put it back in the Ala Wai; it's a Department of Health concern more than a Water Commission yet the matter is before us. We're not compromising that disposal?

Mr. Nance – no, it's an ongoing permit that has limitations on flow-rate, temperature and nutrients discharge which is monitored on a monthly basis and information is provided (to DOH)

Commissioner Beamer – noted on energy sustainability and asked on the closed loop system if there's any brine or other toxins involved in the process and commented on potential micro-algae species that need to flush out and wanted a better understanding of the technology and ecological implications.

Mr. Nance – explained that all groundwater in Hawai'i doesn't have algae but nutrients in it and depending on location the levels may be higher or lower. It is a closed-loop, non-contact cooling system; goes through the condenser and discharged to the ocean. (explained the algae growth in the injection wells due to some levels of nutrients in it, no sunlight and little oxygen levels). Injection wells in the 'Ewa region has similar issue with the loss of capacity over a long period of time.

Commissioner Beamer – reiterated on the issue of brine and other toxins being discharged.

Mr. Nance – confirmed it's not an issue.

(10:15AM Commissioner Meyer joined the meeting)

Commissioner Katayama – (to Ryan) asked on the special conditions in the permit, what is your concern about adding #1 that is not comprehended in the standard permit conditions?

Mr. Imata – asked if he's referring to the suspension revocation use changes?

Commissioner Katayama – yes

Mr. Imata – it's a standard special condition, something we put into all permits we approve, to tell the water use permit holder "don't change the use". We feel comfortable they're not going to change it but want to add it there for extra comfort (gave an example of a non-permitted use of the permit to allowing "cooling" for an adjacent building). Addresses if they add another use, another permit must be obtained.

Commissioner Katayama – asked for it to be imbedded as part of the standard water use permit condition.

Mr. Roy Hardy, (Chief, CWRM Ground Water Branch) – that is in the standard conditions, we put it more upfront at the request of the Commission several years ago for previous applications for approvals of smaller farm lots; Commissioner Buck you may recall as you were the one who asked for this to be more upfront. So, its repeating what's in the standard conditions, but making it more clear to the applicant.

Commissioner Katayama – referred to conditions #8, #11 and suggested it be imbedded into the standard conditions; put it as #1.

Mr. Hardy – we can look at modifying the standard conditions.

PUBLIC TESTIMONY - None

Chairperson Case asked the Commissioners for a motion for item B-2 as submitted

MOTION: (BEAMER/KATAYAMA)
To approve B-2 as submitted.
APPROVED – (CASE/BUCK/BEAMER/HANNAHS/KATAYAMA/MEYER)
KAWAOKA – ABSTAINED (explanation-ensure CWRM staff have discussions with the DOH Clean Water staff)

RECESS: 10:27 AM

RECONVENE: 10:33 AM

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C. INFORMATIONAL BRIEFING

1. Unites States Geological Survey ("USGS") – Overview of the Hydrogeology of the He'eia Watershed, O'ahu

PRESENTATION GIVEN BY: Dr. Scot Izuka, U.S. Geological Survey

Mr. Dean Uyeno, CWRM Stream Protection & Management Branch introduced the submittal item and Dr. Izuka of U.S. Geological Survey.

The first study was done in 1992 and this presentation today is based upon that study. Dr. Izuka gave a PowerPoint presentation on the geological study of the He'eia Watershed. There's two wells in the area and one USGS stream gage which has been measuring streamflow in He'eia stream since 1914. The watershed (stream) is located in the rift zone of the Ko'olau and has many dikes and volcanic sediments which contribute to the way the stream flows.

From decades ago with the Ha'ikū Tunnel and Ha'ikū well installation, and a slight decrease in rainfall, caused the groundwater discharge to also decrease. Rates have been calculated with limited data (back in 1992) and now have improved techniques for estimating groundwater recharge and baseflow. Nearly all data and analyses in the 1992 study were for areas upstream of the USGS gage. Impacts to other areas are possible but have not been studied. There's going to be some effect downstream from the gage, wetlands or discharge to the ocean.

In summary, USGS studies indicate that withdrawals from wells and tunnels have affected streams and springs in the upper He'eia watershed and that impacts of the withdrawal spread beyond the watershed.

QUESTIONS

Commissioner Beamer – Mahalo for the presentation and understand the age of the study done, its seems fairly conclusive that withdrawing water from the dikes is impacting the surface water flow in He‘eia, do you agree with that?

Dr. Izuka – I agree that the studies show, not only the 1992 study but studies done by previous workers and studies back in the 60’s; they agree that withdrawal of groundwater from the dikes has an impact on spring and streamflow.

Commissioner Beamer – perhaps the quantity and amounts we might get closer data if we were to do follow up studies, but by all accounts, its impacting what we’re calling surface flow. I understand it’s part of one water cycle and system, but it has impeded the flow in He‘eia probably for multiple years. Mahalo.

Chair Case – I think I saw your name in the 1992 study, were you actively involved in that?

Dr. Izuka – yes, I was Project Chief.

Commissioner Katayama – do you have plans to further refine the data in this area or next steps projected or planned?

Dr. Izuka – we don’t have any specific projects to study of the impacts of groundwater streamflow in that watershed; but the gage is still there and still recording discharge at least for the upper part of the watershed in Ha‘ikū Valley.

Commissioner Katayama – (to Ayron) are there any thoughts on further refining the data again to update the 1992 studies?

Dr. Strauch – we’ve taken the data available post 1992 and added it to the data set; it is the only data available but it’s a fairly lengthy continuous data set which provides us with good understanding of current conditions at that point in the stream.

Commissioner Katayama – is there anything lacking or is it sufficient enough to provide decision making?

Dr. Strauch – the question staff has been trying to address is what is baseflow at that location, and what it should be to protect instream uses? We’re trying to maintain a fairly narrow focus.

Commissioner Katayama – you need to have confidence on what side the community can support that area without hurting the aquifer-are we there? Measuring that in-terms of sustainability; isn’t that the principle recharge for groundwater flow according to Dr. Izuka’s chart in-flows versus out-flow?

Dr. Strauch – might be a groundwater question; sorry I don’t understand your question.

Commissioner Katayama – *reiterated and summarized his question regarding groundwater recharge according to the study*

Chair Case – I want to ask your question in a different way – as I understand it, the impacts already occurred prior to 1992 to the stream system going through the wetlands and fishponds,

so what you're trying to do Ayron is estimate, as we don't have measurements from back then on streamflow, lower down.

Dr. Strauch – we have the continuous record of stream flow for the USGS station at mid-level.

Chair Case – you have that data from before the tunnel was built?

Dr. Strauch – we have almost eight years of continuous data from 1914-1921 and other years; yes, there is continuous data for pre-tunnel development; Dr. Izuka showed the chart.

Commissioner Hannahs – clarified with the next presentation (submittal item C-2) there would be more information covered and that this presentation was a baseline of that.

Dr. Strauch – yes.

Commissioner Hannahs – in the past 30-years, we've had robust land stewardship activities occurring on that land; in part to slow the flow of water that was rushing through especially during high rain events, and depositing sediment to the fishpond and bay; has the slowing of the flow and utilization of the stream water, are we seeing evidence in theory 1) help with recharge? 2) any evidence of that?

Dr. Izuka – whether it will help recharge – most of the run-off from the rainfall events moves through that valley very quickly; it's very steep and small-about one square mile. I'm not sure what changes were done to improve the recharge but for the upper part of the basin any changes to the stream channel itself would've caused increase in recharge. The biggest change with recharge has to do with rainfall and also landcover, but would need to do a study on that.

Commissioner Hannahs – considering the momentum we have in the communities, I would think it's an important item to put on the list of things to exam as there's a lot of people working diligently at the highest levels of the watershed and agricultural domains; to change the landcover to create ways for a more sustainable food system and enhance recharge. The second question is, is there value in having a second stream gage that's more makai? And is that something USGS does or we do?

Dr. Izuka – I can speak for the scientific value of that, it would absolutely give us more data we can analyze; the same way we analyze the upper gage and having two gages there might give us an opportunity to compare data and how much water is gained between the two sites; and the value of that science towards understanding the impact of groundwater withdrawals on stream baseflow.

Commissioner Hannahs – do you have a wish-list of gages you'd like to install and is this on your list?

Dr. Izuka – its not currently on our list; I've been to the He'eia Wateshed recently and it's really changed since I did that study 30-years ago; I don't have a specific site in mind and would take some filed study but perhaps a gage in 'Ioleka'a.

Commissioner Hannahs – I'm not sure how active USGS is engaged with the current community partners but there's tremendous activity there and now National recognition, might be a good place to prioritize as an area you want to make the investment in stream gage as resources is limited and needs are great.

Dr. Strauch – there was a gage below the confluence for a limited time, 30-40 years ago; we can also estimate groundwater gains using seepage runs during low-flow periods which USGS has done at some point in He'eia. If we wanted to install a monitoring station, it would take years getting in and years of data collection before we got a data set to analyze. It wouldn't hurt to plan for future data needs.

Commissioner Hannahs – recognized the creative ways needed to fund it, given a limited budget; suggest reaching out through community partnerships.

Deputy Kaleo Manuel – we're bringing something (to Commission); USGS finalized a monitoring plan proposal of where we should be collecting data and will be presented next or the following month. It looks throughout the State where data gaps are and being strategic on collecting data with the limited resources we have. This is just one of many areas we can benefit from having more data.

Commissioner Beamer – clearly dikes have a pivotal role in the Ko'olau area in the surface flow we see and somewhat different in other islands; any evidence to show the way the dikes are pumped or managed; and emptied into the reservoir and if it affects the connectivity with potential springs?

Dr. Izuka – I believe that tunnel was free-flowing the first few years of existence; they eventually put a bulkhead in and stemmed the flow of water discharged in the tunnel. In the 1992 study shows the drop which is before they put in the bulkhead. The nature of that analyses merges together whatever affect over the period the graph represents so it could've been dominated by the free-flow period. In the 1962 report by Hiroshima, he describes the direct effect of the tunnel; that springs above the tunnel have gone dry.

Dr. Strauch – I do know they bulkheaded it and that BWS is not gathering daily data in terms of water withdrawn. The previous USGS publications Dr. Izuka eluded to, did a good job identifying the impacts of tunnel construction on not just He'eia stream but nearby streams.

Commissioner Meyer – wanted to comment with regards to the lower gage, I feel installing a gage or two would be beneficial for the long term and provide longer-term guidance that would be more meaningful to all participants and interested parties in this watershed.

011921 02:15:47

C. INFORMATIONAL BRIEFING (CONT'D)

2. Commission on Water Resource Management, - Draft Amended Interim Instream Flow Standards in the Surface Water Hydrologic Unit of He'eia (3028): He'eia Stream, O'ahu

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

Dr. Strauch gave a PowerPoint presentation on the overview of the IIFS process, He‘eia IIFS timeline and instream uses, introduced the Honolulu BWS system, rainfall and streamflow projections, and the proposed IIFS and implications.

Restoration of ecosystems have improved benefits which includes: increased habitats for estuarine species, native endangered wetland birds, riparian vegetation, and improved productivity from the fishpond.

The Ha‘ikū tunnel has not been utilized since 2019, the ‘Ioleka‘a Well since 2016 and the Ha‘ikū Well since 2017 as BWS is in the process of replacing its pumps. The largest nonpotable- water customers in the area are the Kāne‘ohe Marine Corps and the Mid Pacific Country Club. The non-potable water needs by the Kāne‘ohe Marine Corps can be met with recycled water use.

Issues/questions bought up by Honolulu BWS on the amended IIFS are: 1) what extent groundwater extraction is affecting streamflow; 2) if climate change has affected flow; and 3) if future climate change will affect streamflow. Rainfall data collected by UH Manoa shows no significant changes or statistical declines in rainfall. Future end-of-century projections in rainfall are not conclusive and suggest potentially a slight increase or decrease during wet and dry seasons, depending on the model used.

It’s clear that using the sources of the Ha‘ikū tunnel and Ha‘ikū Well are important for providing municipal water needs for the Windward district. There are other alternative sources by Honolulu BWS which can make up the deficient of reduced withdrawal from Ha‘ikū tunnel.

QUESTIONS

Commissioner Beamer – referred to the residents use of the wells for water and if there’s an alternative as ‘Ioleka‘a hasn’t been pumped since 2016

Dr. Strauch – it hasn’t been down simultaneously and referred to BWS for further comment

Chair Case – do we have any indication of the effect of pumping from these wells on the streamflow?

Dr. Strauch – from the ‘Ioleka‘a or Ha‘ikū Well, we don’t have data to identify whether the pumpage is affecting flow at the existing USGS gaging station. As Dr. Izuka identified, there is potential downstream groundwater discharge to the stream that may be impacted by high elevation pumpage. There’s possibility that pumping from these two wells could impact streamflow.

Commissioner Buck – asked on the golf course water use-mgd per acre.

Dr. Strauch – roughly 9,000 gpd/acre if all the water is used just for the golf course; there’s also irrigation needs beyond the golf course (referred to BWS for later comment).

Commissioner Buck – asked referring to the BWS testimony on holistic approach and alternate water sources.

Dr. Strauch – their interest is not discharging directly into the stream; our goal is to increase the baseflow of the stream.

Commissioner Beamer – I'm thinking of examples like the Reppun vs. BWS and the Waihe'e dike/tunnel releases directly into the stream; there seems precedence to do this. You shown there's no drastic decrease in rainfall to show decrease in streamflow so most likely its related to the dike discharge is what I've seen. Does it sound like what you presented?

Dr. Strauch – yes, but I want to make clear it's not that rainfall doesn't influence streamflow, we just know the groundwater portion of streamflow, that supplies (and) essentially identifies baseflow component. It's dependent on recharge and the data don't show significant changes in rainfall. So, the decrease in baseflow has to come from additional withdrawals from source-the well or tunnel.

Commissioner Meyer – with respect to the two treatment plants in the area, it seems to me they only treat R-2 and not R-1 quality so that it couldn't be reapplied for irrigation at golf courses, etc., is that correct?

Dr. Strauch – from our database, the Marine Corps base is an R-2 facility; but it's more of a DOH question regarding the use to irrigate landscapes.

Commissioner Meyer – it seems from your answer that those plants would have to be upgraded to secondary treatment to get to R-1 but it seems like a logical alternative, has there been direct discussion with them on that?

Dr. Strauch – that would happen between BWS and Marine Corps and generally the wastewater facility falls under DOH jurisdiction.

Commissioner Meyer – do you know what happens to the affluent from those plants now and if separate out falls?

Dr. Strauch – discharge into the ocean far from the island, and yes separate out falls.

Deputy Manuel – to add, when Neal Fujii did the update on the water audit, this was one system that didn't participate but we identified it as a potential concern. We've been trying to coordinate with BWS and encourage the Marine Corps to reengaging regarding their use of treated water in order to provide and keep our good potable water for higher quality uses.

PUBLIC TESTIMONY

Mr. Ernest Lau, Manager/Chief Engineer-Honolulu Board of Water Supply – Thank you Chair and good morning Commission members. We've heard a lot of statements made about the BWS, so if there's any clarification you need on how we operate our system, what is consists of, what our challenges are, is very important and would be glad to answer those questions.

Our mission is to provide safe dependable and affordable water now and into the future for our communities. Affordability has come to mind because of the pandemic. People are struggling to pay their bills, we've seen a rise in delinquencies; we know that how we manage our water systems we need to do it in an efficient manner, mindful of the water resources because our sources of supply are wells, shafts and tunnels; so it's very important.

I know impact potentially on streams is true, but at the end of the day we are taking this water to serve almost 1,000,000 people on Oʻahu. Particularly the Koʻolaupoko community there, these tunnel sources are very important to the community. What Scott described as the dikes in that area, wells are not very productive when drilled in Koʻolaupoko. We end up going to Koʻolauloa as far as Punaluʻu, to bring water into this area to Kaneʻohe, Kailua and Waimanalo to serve their needs. The tunnel sources are the best sources in those communities.

We recognize the importance of setting the IIFS for Heʻeia Stream. We're not trying to fight that, but we want to work with you folks. It's also important to understand that a majority of our usage in the Haʻikū-500 system is residential and domestic use and need to balance that when you make your decisions. The other aspects as Ayron outlined in the different alternatives, behind it is a price tag as who and how it will be paid for. If it ends up being BWS then our ratepayers would be burdened as we have no other source of monies; people paying their water bills would finance the project. We want to work with you in finding an optimal solution here.

I also want to provide to the Commission as much information as you need to make your informed decision as I know in the presentation by commission staff there is pressure to act quickly but I would say to please act wisely too; so that you have all the information and see the whole picture before making your decision.

What we proposed in our testimony is to take a pause here for at least 180 days since we've only started being consulted with in October of last year, and recently in the last 2 weeks we finally saw the staff recommendation for the IIFS. That period we can use to work with Kaleo and his team and also bring in USGS as Dr. Izuka mention his study is about 30 years old. We could use the expertise working with USGS to analyze the data to look what can be done to come up with a solution that will meet the needs of instream and off-stream needs.

At this time, I'd like to turn it over to Barry Usagawa to step us through the testimony we have on the methodology we're proposing in setting the IIFS.

Mr. Barry Usagawa, Honolulu Board of Water Supply – Good morning Commissioners and folks. (shared screen of written testimony) I wanted to summarize the main points as we recognize the importance of setting the instream flow standards as also stated in the Koʻolaupoko Watershed Management Plan; of which the restoration that Commissioner Hannahs has talked about was established.

Heʻeia wetland was a catalyst project and we understood at that time our sources in Haʻikū and ʻIolekaʻa were affecting streamflow and we have actually reduced our withdrawal by about 1 mgd based on permitted use when the windward sector was designated in the 90s.

We have questions on the methodology and implementation which I'll walk you through. We don't know how the 1.77 mgd was derived; it doesn't match any of the surface flow section data.

What Ayron presented was more data than we knew about and should be one of the things we work on together in the study *(explained the calculations of the mgd)* and that results in an 80% reduction and is a significant impact to our ability to meet the demand on the 500 system.

The 272 system, Ayron is right; we transfer water from Koʻolaupoko that has a lot of non-irrigation use and recycled water is certainly a strategy there, but we need to be able to withdraw enough water primarily for domestic uses in the 500 system *(named the location areas)*, that's what we need a minimum for; and if you cut too much off, then we have to rely on the other 5 sources: the Haʻikū tunnel, Haʻikū Well, ʻIolekaʻa Well, Haʻikū Valley; and Luluku tunnel and well which is on the side of Likelike Highway. If we cut back in Haʻikū then end up drawing more from Luluku and end up having to affect Luluku stream; and there are loʻi restoration efforts along there too; it's a delicate balance. If you cut-back, we need to get it from somewhere else and ends up affecting other streams. The whole restoration is what I mean by holistic.

In the recommended discharge, we think it's an artificial method of a direct pipe discharge and inefficient and a conduit for drinking water supply contamination. Waiāhole Ditch has lots of water but it's a non-potable system. When you have an open pipe from a drinking water system, if we have a main break and a negative pressure situation, it'll suck that water into the system and end up contaminating it; it's not the best way to restore flow.

We understand we need to cut back and find ways that puts more water back into the stream, that was the designated part of the plan that was adopted by ordinance. What we're suggesting is a more holistic view, perhaps cut back our production; and we can do that to a certain level but cutting it by 90%, compared to permitted use of 1.95 mgd to 200,000 mgd, by setting the IIFS that high, it starts to impact public trust uses for domestic use; and we need to balance all of them, which could affect other streams. We can cut back and that's why we thought having a USGS study, if we can build the dike water levels back, then the streams should restore. This is on the basis of (your term used for decades) in Koʻolaupoko there's a one-to-one relationship between groundwater withdrawal and surface water. Especially in Haʻikū as the tunnel is built at the head of Heʻeia stream, the well is a couple hundred feet away from the stream; when it's that close to a flowing stream, it's a one-to-one.

If we can cut back you can get restoration of streamflow at the USGS gage but potential communication amongst the two watersheds may get restoration of spring-flow elsewhere like ʻIolekaʻa and the wetland. The thing is to try it and see what happens; but defer the setting of the IIFS until the data is known. In the meantime, we are able to cut back at that time frame is in this draft recommendation; 180 days to come up with the plan and in 2 years implement it, basically construct the pipe.

We had initial discussion with USGS and talked about funding; they've expressed interest to understand the hydrologic and geologic resources in Haʻikū in a cooperative study that the board will pay half and USGS will fund the rest. The components of that study are to adjust the operations as Ayron said, the Haʻikū and ʻIolekaʻa wells are offline. The Haʻikū well should be online in the next couple months, so if we cut back the tunnel and pump the well, we don't think the stream flow will change. If you're pulling 1,000,000 gallons from the tunnel or the well, it's still affecting stream flow. To me the best way is to cut back and see what kind of operational scenarios we can come up with and measure the stream flow to see what the benefits are. I don't know what the time frame is but 180 days to develop that scope.

The other thing that makes sense to us is that you set the IIFS, whatever that level is, there needs to be a secondary action of addressing the permitted uses for the sources. In other words, if we can cut back 50% of what we already cut back, then the permitted uses should reflect that; because now you have two methods of management, the instream flow standard which is measured by the stream gage, but also the monthly pumpage that we report to the water commission. Right now the permitted use for those three sources is 1.95 mgd, not 200,000 or 500,000; so you should look at the permitted uses and maybe that's a self-revocation or transfer to other sources that handle that; and use that study to install a second stream gage downstream; because the restoration is happening mostly in He'eia wetland and the fishpond.

So understanding the water is flowing there because it's a gaining stream although there is indication that 'Ioleka'a maybe a losing stream but the efforts on how we manage withdrawal from the mauka sources and what flows into the wetland, cause clearly they want more because they can expand; and we support that – the question is how much?-and what's the impact to that? It's probably going to require seepage runs to understand what segment of the stream is gaining or losing, flow measurements of the stream diversion, and look at the assessment report and revisit the IIFS.

We are prepared to reduce source production to test the stream restoration flows and can do that in weeks to months. What I'd like to do is sit down with USGS and CWRM staff to go over that scope of work to make sure we're all agreeable of what can we do with the limited funding we have and prioritize and make those changes. It's just a matter of valving and if we cut back, we'll build up those water levels.

Finally, we appreciate the fact you folks are taking the time for an informational meeting to discuss this instead of an action item. As Ernie was saying, we're willing to and respectfully want to work with all those parties including the He'eia folks to ensure its transparent and everybody knows what we're trying to do; and try to optimize this whole operation – meeting domestic demand, restoring stream for cultural, traditional and customary practices – mauka to makai. With that, I'll end as I know you a bunch of questions, but that's basically a summary of our testimony.

Mr. Lau – thank you Barry; one last thing- we are willing to collaborate on this effort and try to move forward in a timely way. I would make a request, I know Dean is doing a great job in leading the stream group there at the Commission but also would be good to involve the groundwater side, Roy Hardy and his team to be involved in these discussions. We're talking about transferring the production from tunnels to wells that have water use permits on them; but the interaction and issues with the wells all need to be brought into the decision making here, so it's a more holistic one-water approach for management, thank you.

QUESTIONS/DISCUSSION

Commissioner Hannahs – Ernie, Barry, thank you very much for being here, I appreciate your comments. The way I look at the submittal it's well-considered and thorough reflection of important data and information that leads us to potential decisions but certainly needs to be vetted not only with you, but key stakeholders and others in the community; and appreciate your willingness to collaborate. Are you prepared to make this a high priority? We're moving this forward and you have many matters on your plate, and we want to keep this going and whether

the 180-days is reasonable given our other constraints; but are your prepared to back this up with staff support?

Mr. Lau – yes, we are willing to put the effort necessary to get this done. Barry is motivated here with the team of our hydro-geology branch and going to mobilize other divisions to look at operational changes, costs and impacts might be, to moving production of other sources in our system.

Commissioner Hannahs – did you see anything that is contrary to your philosophical or strategic directions?

Mr. Lau – one thing I saw, is the proposal we can transfer the loss of production of Haʻikū tunnel to the Koʻolauloa area, is something we need to look at closely. *(referred to the high chlorides in wells at Punaluʻu and the water transmission lines)*; my suggestion is to look at it as a one-water – ground and surface water both involved in discussions. We live on an island and the water we drink has to come from someplace; unless we desalt the seawater from the ocean; it'll come from groundwater or tunnel (gravity) sources. I think all the experts need to be at the table in the discussion.

Mr. Usagawa – certainly we realize what Kaleo was saying about the Kaneʻohe Marine Base-they stopped using recycled water; it was after the audit we asked. They had an algae problem; because they expanded the housing at the Marine base, they needed to plant screening trees around the perimeter of the golf course and in the process of doing that; and once done they'll resume recycled water – right now they're irrigating with potable water. Their demand is averaging 2 mgd, and this summer because of the drought, they increased it to 3 mgd. BWS had a meeting with them and asked them to cut back as we were getting higher chlorides in Punaluʻu; and they immediately cut back to 2 mgd.

Conservation wasn't mentioned; I think that is the most cost-effective way to reduce the demand on the 500-system. We need to focus our conservation in the system that's using Haʻikū tunnel water. We have a rebate program and Windward is prime for stormwater capture. With motivation, I live in Haʻikū and very motivated to make this happen before retiring. Hardly anyone irrigates because it rains so much (on Windward side)-we get 75 -inches above Kahekili; but when there's a drought the sprinklers come on, streamflow is low and demands increase; and that's when it's concerning. Our engineering staff is working with our operations to find what the mix is. Once we define that in the scope and test it with USGS monitoring, we can find the benefits of the cut-backs in withdrawals.

The other recycled is Waimanalo; a lot of people has been talking about that, so those are the two recycled water. ʻAikahi is too salty (2,000 mg/L chlorides), it will kill the grass – there's too much seawater infiltration into the collection system; and with sea-level rise, it's going to get worse. It's a huge effort to replace sewer lines. Their challenge is assessing or expanding recycled water in the Kailua area. There's 5 big non-residential users in the 500-system (explained the usage of each): the State hospital, Windward Community College, Pali Golf Course, Hawaiian Memorial Park, Hawaiʻi Pacific University (will convert to a Castle Medical Center expansion). Aside from conservation in the 500-system the next less expensive solution is more wells, but the other side of Hawaiian Memorial Park Cemetery is Kapaʻa Quarry which has non-water bearing blue rock. The closer you get to Kailua, there's no chance for finding additional sources. You have a big impoundment at Hoʻomaluhia dam that's a possibility and

would take infrastructure to get water from the dam to the big users, but it's a cost; but the pump structure that could be used for non-potable irrigation.

Commissioner Hannahs – you gave us great flavoring of the nature of these discussions that will be occurring and the insights and implications you can bring to it and appreciate that; not sure we have the time to get into all of them now, but you certainly indicated what discussions you'd like. Ayron, what does the 180-days do to our timeframe?

Dr. Strauch – we proposed 180-days for BWS to gather their minds and come up with a solution how to meet the IIFS and propose additional work seems reasonable.

Commissioner Hannahs – Chair, I think we can look back on the last 20-years on what happened at He'eia with great pride as community and institutional members to ride that wave of momentum by taking further actions as the time is right and the leadership is right, right now and with BWS and CWRM, we got the team to do it! Let's get this done, we have great relationships and fantastic leadership in the community to engage as well, thank you.

Chair Case – I'm not sure we have to make a decision on the 180-days, let's not stretch it out, I think there's urgency here in terms of sorting this out in the discussions and just want to make sure this is a high priority for everyone.

Commissioner Beamer – I want to thank Barry and Ernie and always mahalo your leadership and the diverse perspective and urgency you include. With this particular one, feels like a 180-days is somewhat long and hope we can jump in there quicker. One issue for me is the 9,000 plus gpd use by the military and seems like re-shifting those uses might enable us to get more water to the wetlands quicker. This is a rare opportunity, and we might be on the cusp of seeing a return of native biota in these streams. Perhaps there isn't another ahupua'a is as closely to being somewhat restored and there's a lot to be gained here. I appreciate we want to get this right and looking at existing usage and suggesting the use of recycled water more immediately, knowing that the stream is in need is important. Seems like most of the large uses are private entities and not public trust users – can you comment on that?

Mr. Lau – any help the commission can do to pressure the military to use recycled water in Kane'ohe will be appreciated; we put pressure on them, but they operate on a different timeframe. Barry you want to talk about the breakdown on the system usage of the 500-system?

Mr. Usagawa – that's what we're compiling now (touched on the system use area); the marine base doesn't use any Ha'ikū water. Most stays up and we're looking at how much we can reduce that; and can do that relatively quickly- not going to take 180 days to do that. I'm only concerned about the data gathering and if we make the change before we develop the baseline. If the baseline is solid, we can make the changes; it's a matter of meeting and suggest that we circle back to the Commission with progress before that – a schedule would help us and we can start meeting on it and start developing the framework with more meat.

Mr. Lau – Commissioner Beamer, to answer your question on the breakdown of domestic usage and other commercial, non-residential use. I know on an island-wide basis we have 170,000 customer accounts and over 80% of those are either multifamily or single-family residences. There is a small portion of accounts that are non-residential (commercial or government) and

will have a better breakdown-I've asked Barry to do a breakdown of the 500-system which is the subject of this discussion; there's only a few big commercial users on the system.

Commissioner Beamer – is the military being charged higher rates for their excessive usage? Will be one way to try to influence and put pressure there.

Mr. Lau – because they are a governmental entity, they fall under the non-residential rate. We are going to do a rate study in the next year or so, so any testimony or recommendations from the Commission regarding non-residential rates would be appreciated. Right now, the non-residential is all metered, they pay their bill. (reiterated the usage amount and recent cut-back).

Commissioner Meyer – thank you Barry and Ernie for your testimony and certainly for your expressions of interest in cooperating collaboratively going forward, greatly appreciated; do you have a rough idea of the residential connections you have in the 500 serving area what the average consumption might be?

Mr. Lau – I don't have that number, but I did ask Barry for it.

Mr. Usagawa – I think a couple thousand units and don't have a whole lot of irrigation demands; our design demand is 400 gpd per residential unit for municipality.

Commissioner Meyer – a couple thousand at 500 gpd?

Mr. Usagawa – yes, and they're not using 400, I'd say maybe 300 per unit; the lots are fairly small; they don't irrigate so its mostly indoor use, but there's a significant amount of homes in the area.

PUBLIC TESTIMONY (CONT'D)

Ms. Hi'ilei Kawelo, Executive Director, Paepae O He'eia – Aloha Chair Case and Commission members. Paepae O He'eia is a non-profit that cares for He'eia fishpond and has been doing so formally since 2001. I'll keep it short for today and save the lengthy testimony for the next meeting. In general, I support the staff's recommendation for instream flow standards as stated which is 1.77 mgd.

To put it in perspective we're at the bottom of the watershed, so we're beholden to everything that happens mauka of us. So however much or little water makes its way down, that's what we get and all we get. We have 7 sluice gates at He'eia fishpond to service an 88-acre traditional aquaculture system. Of those seven gates, three of them are along He'eia stream; of those 3, the most makai doesn't typically function to move fresh water, its more a brackish water gate and functions tidally.

The other 2 are more mauka along the stream and functions to bring freshwater into the pond. One functions to bring freshwater into the pond at the rate of a trickle, the size of a small dowel; that's how much water we allow to come into the pond from the stream. The reason for that is our gate is boarded up with two –2"x12", so 2-feet worth of boards to not allow freshwater from the stream into the pond. If we pulled those boards, we would drain the stream. That's how little water makes it way down to our muliwai. You all know the importance of freshwater to

ecosystem and estuarine health and to the fishery of Kane‘ohe Bay. Our third gate which is most mauka is completely plugged up. It doesn’t allow water into the stream.

So one day soon, hopefully within 180-days we can see an increase in freshwater making its way into our loko i‘a and out into Kane‘ohe Bay. We talk about 20 years of restoration; it started before Paepae, it started with the Ahupua‘a Restoration Council for He‘eia. All of us community orgs in He‘eia are the current iteration of restoration here; and very privileged and honored to do this work. To date, its been physical restoration, grueling work-cutting mangrove, trees, moving dirt, building walls – and really the conversation of restoration begins and ends with water.

We’re very excited to have these conversations and we’ve been learning a lot in the last couple of months, so mahalo nui to (CWRM) staff and Board of Water Supply for educating us and we look forward to learning more in a timely fashion so we can see some changes happen, mahalo nui.

Mr. Kanekoa Schultz, Executive Director, Kāko‘o ‘Ōiwi - Aloha Chair Case and Commission members thank you for the time for us. On behalf of Kāko‘o ‘Ōiwi, we appreciate the CWRM to support the interim instream flow standards. Behind me, you can see the wetland and hear the ae‘o flying around. That water brings back the habitat for the endangered birds we see. Allowing the water to comeback or increase, it gives Kāko‘o ‘Ōiwi and our wonderful community a chance to hear the sounds of our ancestors. It allows us to fish, practice our culture; by increasing the streamflow, it allows us to walk in the footsteps of our ancestors and the water binds us between Paepae ‘ohana and Kamakau School, that water flow is what keeps us together.

We do recognize the challenges. It does come across with Board of Water and other partners. We’re grateful for the support of Board of Water- all those years with Barry, so we welcome and look forward to working together. The 180-days is a long planting season for our kalo and its almost an entire season for He‘eia, and wondering if it could be shortened or a release of a study where they do release a lot of water and gives us a potential to also plan ahead, for what we can return to, just so the Commission is well-informed – we’re with the increase in the instream flow standards-this is what we’re able to achieve. This is the planning and growth that Paepae was able to see, that is the amount of water we’re able to see in the system, and it does go both ways.

Recognizing how valuable water is, how waiwai is valuable, so it’s a balance. We welcome to help Board of Water with conservation because in Ayron’s study, it showed how much we can really save. Mahalo for your time; I welcome the Commission to come up to He‘eia, it’s a standing invitation to also Board of Water; Mahalo nui.

Mr. Kanaloa Bishop, Paepae o He‘eia – Aloha everybody-Chair Case and Water Commission. Thank you for letting me submit oral testimony; I did submit written testimony already. I’ve been listening to what’s been going on and feeling it out. This is a learning experience for me and I’m trying to comprehend all of what’s going on. A lot of what I’ve been hearing over the past 2 hours, is the same thing I’ve been hearing over the last 10-15 years with the Board of Water Supply and CWRM. I feel like we’ve been having this same conversation in our community for decades. I heard the term balance and heard 1,000,000 people and from all different sides too.

Obviously, we need clean drinking water for everybody here. And where does the ecology on practitioners come in after that? Here in He‘eia we have a unique opportunity to work in the opposite direction. From what I’ve seen through the last decade in terms of protecting water on our ‘aina, we almost always work in the direction where we’re trying to give back a little water, trying to listen and give back here and there to meet everyone’s needs but we’re still holding on to whatever water we’ve already taken from these systems. I would encourage us to work in the opposite direction if we could.

We have lots of people (showed a list of organizations) we’re all in this area-some government, non-profit, some are grass-roots educational orgs all working in the same way. I looked at BWS and CWRM website and both talked about future generations and sustainability. We can put all the water back and have it all restored and go the other way-and see what’s really serious and what do we really need that water for? A lot of the alternatives I’ve heard the past hour, are the same I’ve been hearing the past decade. Where’s the pressure to instill those alternatives? I have not seen any; no pressure for us to use secondary treated water or rain catchments in our own houses to water our own yards.

I’m here educating the youth that comes through, I run the educational programming here in He‘eia. Conservation and the protection of our water resources is the highest thing I teach about here at the fishpond; above ecology and above how the fresh-water affects the fishpond-it’s just about having a healthy ahupua‘a and Hawai‘i. I feel we’re right there but getting caught up in the little nitty gritty’s of the golf course or the Marine Base. I want to wipe it all clean and work backwards. I don’t understand the whole system and trying to learn it and know there’s a bunch of parties involved.

If we strive and work in terms of decades and really push for the full restoration of water across all of the ahupua‘a, we’ll come to a better understanding if we can really sustain 1 million people or 2 million people-and where does that balance come? Who suffers-the ecologists, practitioners, and the ‘aina itself. That was a lot different from my initial testimony, just because I’ve been hearing the same things and its almost redundant.

I challenge us to push for the highest, put all the water back and how can we work together to do that; mahalo.

Mr. Frederick Reppun, Educational Coordinator, He‘eia National Estuarine Research Reserve – Aloha mai. Mahalo to the Commission for allowing me to give testimony and to the staff for all of your hard work on this so far. Like Kanaloa, I see students come through the reserve; I also work with Paepae o He‘eia, Kāko‘o ‘Ōiwi and the Hawai‘i Institute of Marine Biology to help coordinate their programs with each other and with Papahana Kuaola to some extent.

I just want to say I personally support the recommendation that Ayron has put forward. I think it moves us one step closer to the restoration we all want to see. It doesn’t get us there by any means, in fact given the average amount of flow that would increase as a result to the recommendation is enough to do some of the immediate plans of the lo‘i restoration we have. In the long term, we need to look at how we can further increase flow or better use what’s available.

From an education perspective, I just want to say I'm willing to work with the Board of Water Supply, and I understand that discharge of water from the tunnel may put some financial strain and whatever we can do as a reserve to help advocate for water conservation among the 14,000 students we see per year collectively among the three organizations of the reserve; whatever we can do to help promote conservation and reuse, we're ready to help and looking forward to further conversation on that aspect of the issue; thank you.

Dr. Kawika Winter, Executive Director, He'eia National Estuarine Research Reserve – Aloha Chair Case and Commissioners. Thank you for the opportunity to testify today; I submitted written testimony several weeks ago, so I stand on that testimony but that was prior to the staff's recommendation of 1.77 mgd, which I'm supportive of. Congratulations to staff that was an amazingly thorough presentation; I certainly learned a lot and want to address the point that Commissioner Hannahs bought up about leveraging funding to install another gage. I certainly would be open to working with USGS in leveraging our federal funding in the ahupua'a to get that installation and maintenance of another gage and will reach out to USGS after this.

Also, wanted to point out we've been in discussions with Board of Water Supply which have been informative, transparent and we have a good working relationship. We're also willing to work with CWRM, DLNR and USGS staff of conducting research to understand the ecological ramifications of a restoration of water flow to the stream. If anyone is interested, please reach out.

Also, wanted to point out that Kanekoa Kukuea-Schultz testified earlier, and he was on-site in He'eia, and I almost heard the ae'o louder than his testimony; and want to congratulate the staff because the ability to open up these hearings such that people can testify in their place, gives the 'aina a chance to speak for itself; and we heard the 'āina testifying right there. I would say the ae'o are testifying in support of a restoration of stream flow. I'm happy to answer any questions, otherwise thank you for the opportunity.

DISCUSSION

Commissioner Buck – we've seen this many times that staff recommends an IIFS, it becomes real; I want to thank Ayron and the CWRM staff for doing that. I would like to see some action; I think 180 days is too long. I'm concerned as the domestic water use is a public trust so we can talk about balance. There are no priorities among our public trust resources but there's a lot of non-public trust uses going on that's affecting the public trust and need to see more immediate action.

I think any non-public trust users should be notified there is an upcoming ruling by the commission and is going to affect the use *(reiterated about the leadership of the parties and moving forward)*. I would like to see something between 60-90 days to have staff comeback and give us a report. I'm not as concerned about the 1.77 mgd in 90-days but would like to see some immediate action that starts putting more water back in the stream. I want to thank everyone who testified today on this issue.

Commissioner Hannahs – I want to concur with Commissioner Buck's point-of-view that we should shorten the timeframe for the benefit of the community members the benefit of the community members and BWS. We lose two important commission members at the end of

June; Mr. Meyer and Mr. Beamer. If we take this to the end of that and start a whole process with new commissioners on board, then it'll go beyond the 180-days.

If we can get the important issues addressed within 90-120 days and get it on the agenda by June or sooner.

Commissioner Beamer – also support and I understand there's a lot to think through, but definitely support about hearing this back on the agenda sooner than 180-days, perhaps April or May would be good whether it's an update or formal recommendation; seems like we're pretty close.

Commissioner Meyer – seems there's some things bought up today would be nice to have answers on additional metering and consumption that are outstanding and a better understanding in the categorization of water use which staff could do but would require additional cooperation and help from USGS in terms of lower elevation meter; I'd like to see that; and see some feedback from the board in respect of residential usage. I would have no objection to any kind of timeframe and if you'd like to move it along to be expected, it can.

Deputy Manuel – I want to thank the Commission as well as all the testifiers; especially the community for engaging in this process and conversation. We added this informational item we the specific recommendations from staff as a way to encourage dialogue and co-creation of our preferred future rights, so hearing that from community as well as all participants and Commission, we'll try to bring something back in April; that's about 90-days. Whether it's an update on what conversations and additional data we've collected, and/or recommendation with setting an IIFS and still gives us May or June to refine things, and we'll have our full set of Commissioners by that timeframe.

Commissioner Katayama – asked Deputy to prepare a "hit-list" of things that needs to be addressed by the group in looking at the entire system.

Deputy Manuel – replied it will be reviewed as the meetings are recorded and will use that information and findings to fine tune the recommendation when it's presented.

Commissioner Katayama – noted if the Commission will be able to offer further comments if need further clarification.

Deputy Manuel – noted will summarize that and the minutes are very detailed and will have the next month for review and will come up with a hit-list of items to follow-up with all the parties, with the goal to have that reported on in April; maybe we'll be able to recommend an IIFS or action.

Chairperson Case thanked everyone for their helpful comments, questions and information and look forward to hearing back in a few months.

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C. INFORMATIONAL BRIEFING (CONT'D)

3. USGS – Low-Flow Characteristics of Streams from Wailua to Hanapēpē, Kaua'i, Hawai'i

PRESENTATION GIVEN BY: Ms. Chui Ling Cheng, U.S. Geological Survey

Mr. Dean Uyeno, CWRM Stream Protection & Management Branch, introduced the submittal item and Ms. Chui Ling Cheng of U.S. Geological Survey. The studies were done back in June 2015 in two phases. The second phase just completed with the publication of the USGS report.

Ms. Cheng provided a PowerPoint presentation on the submittal item. The study area has 9 basins from Wailua River to Hanapēpē. The main surface-water uses in the study area are: hydropower production, diversified agriculture, taro cultivation, and habitat for native species. There are two active continuous stations that monitor natural flow in the northern region which leaves the southern parts without much continuous data representation (without active stations).

Four questions were addressed by the study:

- How much surface water is available?
- How does streamflow vary along the streams?
- Do the streams continuously flow mauka to makai?
- How can this information be used?

Ms. Cheng summarized and explained the approaches used to address the four questions. In summary, the streams in the study area are generally gaining except for the lower reaches of the North Fork Wailua River, Nāwiliwili, Waikomo, and Hanapēpē River. Under natural flow and flow conditions of the seepage runs, majority of the streams do flow mauka to makai.

QUESTIONS

Commissioner Buck – asked about the cause of the losing reach of Wailua River, if it's because of tunnels?

Ms. Cheng – Several seepage runs were done over the years, and the most recent study shows Wailua as a losing range, but very small losses; because it's a negative, it counted as a "loss", but it's very minimal (explained the results of the seepage run studies). Also, although its misleading as the results show the latest seepage run, the results differ and didn't want to make generalizations of the results for all the seepage runs.

Commissioner Beamer – how often do we have gaining streams that become losing streams?

Ms. Cheng – there would need to be a huge change in the morphology of the stream channel; different flow conditions and the measurement itself do have (minor) errors; I can safely say the losses within the reach within those measurement areas.

Commissioner Beamer – what about changes in baseflow and groundwater, will it be significant in that area?

Ms. Cheng – groundwater comes from the thickly saturated setting within that area. If you're looking at various flow conditions your groundwater will change.

Commissioner Buck – (to Ayron or Dean) how does this help us move forward on issues in the Wailua basin?

Deputy Manuel – reminded Chair (& Commission) there's a current contested case hearing, so avoid any conversation related to Wailua, Wai'ale'ale and Waikoko; that hasn't already been presented as part of the draft submittal before the Commission.

Chair Case – noted (to Commissioners) that importance.

Commissioner Buck – (rephrased his question) how does this help us in establishing IIFS for streams under the Grove Farm property?

Dr. Strauch – understanding the availability of water under current climate conditions is key to estimating the impact of a particular stream diversion on downstream flows (gave an example of data relating to a Q90 flow).

Mr. Uyeno – with the release of this study from USGS it will allow us to move forward on proposing an instream flow standards in this area and look forward to bring back the Lāwa'i which will be similar like today's submittal and presentations.

Chairperson Case thanked Ms. Cheng for the informative presentation and appreciated all the work USGS and everyone has done on this as there's great interest in this data and look forward to a future report.

PUBLIC TESTIMONY - None

D. ANNOUNCEMENTS

Deputy Manuel – OEQC (Office of Environmental Quality Control) concurred with CWRM's exemption list in regarding compliance of Chapter 343; and thanked Mr. Nicholas Ing (CWRM Planning Division) for his work on this.

Chair Case also thanked Nicholas for his work on the project as well.

E. NEXT COMMISSION MEETINGS (TENTATIVE)

February 16, 2021 (Tuesday)

March 16, 2021 (Tuesday)

This meeting was adjourned at 1:40 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:

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com

January 19, 2021

Ms. Suzanne D. Case, Chairperson and Members
State of Hawaii
Department of Land and Natural Resources
Commission on Water Resource Management
1151 Punchbowl Street, Board Room 132
Honolulu, Hawaii 96813

Dear Ms. Case and Members:

Subject: Testimony on Draft Amended Interim Instream Flow Standards in the Surface Water Hydrologic Unit of He`eia (3028): He`eia Stream, O`ahu

The Board of Water Supply (BWS) recognizes the importance of setting an Amended Interim Instream Flow Standard (IIFS) for He`eia Stream. We appreciate the Commission's informational meeting to gather stakeholder input on the proposed IIFS of 1.77 million gallons per day (MGD) for He`eia Stream. However, we have questions on the methodology and implementation and request sufficient time be allowed to ensure a comprehensive evaluation prior to the Commission taking action on setting the IIFS. We request consideration of the following comments.

Methodology for Setting Amended Interim Instream Flow Standard (IIFS)

In our previous testimony on this subject, dated November 23, 2020, we presented detailed comments regarding the analyses shown in the Draft Instream Flow Standard Assessment Report for the Hydrologic Unit of He`eia (3028). Our November 23, 2020 testimony is attached for reference. Our testimony outlined numerous questions and concerns related to the analyses and the associated, limited data behind the estimated hydrologic relationship of historic rainfall to streamflow, streamflow measurement locations and available data, and the understanding of the hydrogeology of Ha`ikū Tunnel, Ha`ikū Well and `Ioleka`a Well. To date, BWS has not yet received a response from the Commission regarding these questions and concerns.

Subsequently, the draft the Commission on Water Resource Management (CWRM) Staff Submittal for the CWRM Board Meeting of January 19, 2021, Draft Recommendation section states that the 1.77 MGD represents "natural baseflow under current climate conditions". Yet this number is not reflected in the Surface Flow section; for example, it does not match the numbers shown in Table 2 or Figure 3. Furthermore, it is not clear what "under current climate conditions" implies; although the Climate Change section appears to continue the previous CWRM staff assertion that rainfall has not changed in the He`eia area and therefore is not a consideration in establishing an Amended IIFS.

At this time, BWS does not understand the methodology, particularly the mathematical analyses, used by CWRM staff to arrive at the proposed Amended IIFS of 1.77 MGD. We recommend that the U.S. Geological Survey (USGS) be involved in the hydrogeological evaluation and we are open to entering into a cooperative agreement with USGS as they have expressed interest. We look forward to participating in the evaluation with USGS, CWRM and the He`eia Stream users.

Implementation of Amended IIFS

The draft CWRM Staff Submittal, Implementation section directs BWS to "construct a pipeline from the transmission pipe out of Ha`ikū Tunnel to be able to discharge water to He`eia Stream", with the purpose of maintaining a proposed Amended IIFS of 1.77 MGD. A median base flow of 0.96 MGD 1989-2019, would result in a release of approximately 0.8 MGD of the 1.0 MGD production of Ha`ikū Tunnel into He`eia Stream; i.e., an 80 percent reduction. We note that BWS has already reduced source production by almost 1 MGD among the three BWS sources (Ha`ikū Tunnel, Ha`ikū Well and `Ioleka`a Well) compared to their total Permitted Use of 1.95 MGD. The Permitted Use was established by CWRM based on existing use during the Windward sector designation process.

There is a potential economic impact of such a large Amended IIFS on BWS's ability to provide adequate water supply within the Windward 500' water system, especially in a drought. The consequence of this impact was inadequately addressed in the draft CWRM Staff Submittal along with an incomplete understanding of the extent and operations of the BWS water system and requires more time for comprehensive evaluation and data sharing.

We believe the artificial method of direct pipe discharge is inefficient, provides a conduit for drinking water supply contamination and is subject to seepage losses and evaporation as the stream water flows to He`eia wetland and fishpond, where restoration efforts are occurring. We would like to explore a more natural solution to stream restoration by reducing source production of all three of BWS water sources, in a holistic watershed approach. By increasing dike water levels, water would naturally migrate into He`eia and `Ioleka`a Streams and not just at a single point.

We envision working with CWRM and USGS on piloting operational changes to determine an optimal solution that balances all public trust uses (water in its natural state, traditional and customary practices, domestic use and water for the Department of Hawaiian Home Lands (DHHL), with the consideration of directed water conservation and water loss control within the Windward 500' system. The majority of the 500' system consists of residential homes above the 172' elevation located mauka of Kahekili Highway, upper Kaneohe Bay Drive, Kamehameha Highway around Mokulele Drive and in Maunawili Valley and the Kamakau School in Ha`ikū Valley is on DHHL lands. We understand and consider residential water use and water for individual personal needs, including in non-residential developments, as vital domestic public trust uses, and among the highest uses of water resources.

Additional items in the proposed USGS study could include the following:

1. Water system operational adjustments with pumping scenarios with Ha`ikū Tunnel, Ha`ikū Well, and `Ioleka`a Well;
2. Recommendations for reductions in BWS permitted use for unused water;
3. Installation of a stream gauge downstream of the confluence of He`eia and `Ioleka`a Streams;
4. Updated seepage runs along He`eia and `Ioleka`a Streams;
5. Flow measurements of stream diversions; and
6. Re-evaluation of the Draft CWRM Instream Flow Standard Assessment Report and Amended IIFS.

BWS is prepared to reduce source production to test stream restoration flows as a key component of the study. Finally, we would like to analyze the economic impacts of the various alternatives of the restriction of non-instream use in terms of costs to our customers who will ultimately have to bear the burden of those costs.

The study scope of work could be completed within 180 days pending discussions and a timeframe to complete the study will be dependent on the scope. Given the many competing needs for limited water resources in this area, BWS respectfully requests your favorable consideration to ensure that the foregoing issues are adequately considered and addressed before this Commission issues a decision.

If you have any questions, please contact me at 748-5061.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Attachment

2021 Jan 14
Hope Hamilton Kallai
Kīlauea, H 96754

Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

Re: Jan. 19, 2021 Agenda Item C-3 USGS – Low-Flow Characteristics of Streams from Wailua toHanapēpē, Kaua'i, Hawai'i

Aloha e Chair Case and Honorable Commission Members:

I am very glad the long-awaited USGS study on the Low-Flow Characteristics of Streams from Wailua to Hanapēpē, Kaua'i, Hawai'i is finished and is being presented to this Commission, a scientific data set that is so important. Mahalo for co-funding this study of Puna District, Kauai streams, the first step in establishing Instream Flow Standards. I hope they can be integrated into flow regimes quickly. When establishing flow regimes, I hope this Commission will the support the intact hydrologic connectivity of the stream system and not allow stream beds dry for hundreds of feet until water is returned through a sluice or throwout. No more 100% diversions, drying up makai stretches of stream. 'O`opu, hihiwai and 'opae cannot migrate through dry stream beds. Instream flows must be established throughout the entire stream, not leaving dry patches ending migration and killing fish.

I have been concerned about the paucity of data on some of these waterways and about the Waiale'ale stream gage being nonoperational and data not accessible. Thank you again for partnering with USGS to fill these data gaps.

On August 21, 2018, at the Kauai CWRM meeting, this Commission implemented monitoring and reporting conditions on the stream divisions at Wai`ale`ale (NF Wailua) and Waikoko Streams. These reporting conditions set by CWRM August 2018 are not being met. The Wai`ale`ale gage is down and the historic (2 year) data is not available. At the December 2020 BLNR meeting, the annual month-to-month RP 7340 for the waters of Wai`ale`ale and Waikoko was renewed for the 18th year. Additional reporting conditions were implemented by the Board, because KIUC is still failing to provide the requested measurements. KIUC is instructed to provide flow data for all diversions and tailraces and power production data since 2017 and revisit the BLNR. Waikoko stream gage readings are not available, even after being requested by this Commission. The 2 forks of Waikoko Stream are dry for hundreds of feet below the `Ili`ili`ula/North Wailua ditch.

I certainly hope when instream flow standards are established, they consider the migration connectivity. or amphidromous species, and do.not allow dry stretches of streams below ditches. Can this Commission request KIUC compliance with the monitoring and reporting conditions that were implemented in August 2018?

Mahalo in advance for quickly adopting the data from the Low Flow study, so the best informed decisions can be made about our streamflows.
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