

MINUTES
FOR THE MEETING OF THE
COMMISSION ON WATER RESOURCE MANAGEMENT

Approved by Commission on
Water Resource Management
at the meeting held on
5/20/15

DATE: April 29, 2015
TIME: 9:30 am
PLACE: Kauai Planning Commission Meeting Room
Lihue Civic Center
4444 Rice Street
Moikeha Building, Rooms 2A and 2B
Lihue, Hawaii 96766

Chairperson Suzanne Case called the meeting of the Commission on Water Resource Management to order at 9:44 am.

The following were in attendance:

MEMBERS: Ms. Suzanne Case, Mr. Jonathan Starr, Mr. Michael Buck, Ms. Denise Antolini, Mr. Milton Pavao, Mr. Kamana Beamer, PhD

ABSENT: Ms. Virginia Pressler, M.D.

STAFF: Roy Hardy, Rebecca Alakai, Malie Beach-Smith, Lenore Ohye, Jeremy Kimura, Neal Fujii, Katie Ersbak

COUNSEL: Colin Lau, Esq.

OTHERS: Steve Spengler, Tim Kallai, Hope Kallai, Bridget Hammerquist, Kaleo Manuel, Makaala Kaaumoana, Don Heacock, Doug Codiga, Basil Gomez, Landis Ignacio, David Henkin, Dawn Huff, Jason Hines, Sherri Cummings, Kipukai Kualii, Kem Taylor, Roya Kawabata, Tek Nickerson, T. Phil Tacbian, Dennis M. Esaki, Pat Gegen, Gilroy Yorkman, Klayton Kubo, John Aana, Phoebe Eng

Chair Case called the meeting of the Commission on Water Resource Management (Commission) to order at 9:44 a.m. She asked the public to sign in and thanked the Commission staff for planning the logistics for the site visits and meetings.

The Commission staff introduced themselves to the audience.

Commissioner Starr also thanked the staff for their hard work and dedication.

A. APPROVAL OF MINUTES

February 18, 2015

MOTION: (Pavao / Starr)

To approve the minutes.

APPROVED. Chair Case abstains.

Commissioner Beamer said it has been a long time since the Commission's last meeting. He asked that the Commission continue to meet regularly.

Commissioner Antolini said the minutes are very detailed and serve as a great resource to the community.

Commissioner Starr commented on the Commission's monthly bulletin that provides updates on actions before the Commission. The website also has information for the public.

Chair Case announced the posting of the Water Deputy position. Applications will be accepted until May 5, 2015.

B. ANNOUNCEMENTS AND UPDATES

1. New CWRM Commissioner

Roy Hardy (Acting Deputy Director) welcomed Chair Case to the Commission and congratulated Commissioner Antolini on her appointment until the end of June 2015.

2. Recap of Statewide Water Resource Protection Plan (WRPP) workshops

Lenore Ohye (Planning Branch Chief, Commission on Water Resource Management) said the update to the WRPP should be released sometime next year. As part of the update process, workshops were held statewide on Oahu, Kauai, Molokai, Lanai, Maui, Kona and Hilo throughout the month of April 2015. The community shared their thoughts and the consultant is in the process of summarizing those comments. The staff will come back next month to report on the common themes and recurring concerns.

Commissioner Buck commented on the coinciding update of the WRPP and the Department of Health's (DOH) Water Quality Plan (WQP). He said he hopes to discuss at the next meeting how those plans can be integrated and an action plan that lays out criteria and recommendations for the next administration over the next three years.

Commissioner Starr requested that DOH attend the next meeting and report on the status of the WQP update. This is the first update of the WQP since 1990 and the first time the community has been able to comment. There are community concerns about water quality. These concerns can be addressed through the WQP update process.

Ms. Ohye thanked Commissioner Starr for his request and said the staff has been working with DOH to provide an update to the Commission in June or July. The staff will request that an update before the Commission be moved up to May.

Commissioner Beamer thanked the staff for coordinating the WRPP workshops and allowing the commissioners to attend.

Commissioner Antolini thanked the Kauai community for their attendance over the last few days. The Commission is trying to make the extra effort to track what questions were asked at the WRPP workshops and respond to each question.

Ms. Ohye said “correct.” The questions and responses will be posted to the website. A compilation of the comments will be posted by next month. She thanked the commissioners for attending the workshops and said the communities have requested more Commission presence on the neighbor islands.

3. Recap of April 28, 2015 West Kauai site visit

Mr. Hardy recounted the highlights of the West Kauai site visit. This is the first field investigation for the commissioners. Another limited meeting will likely be schedule in the next few months. Testimony was taken at the end of the day. Some folks may not have had a chance to testify due to time constraints.

Commissioner Starr thanked the staff, the consultant and the parties for sharing their knowledge of the ditch systems and helping the Commission understand the complex set of issues. He said the Commission will return to tour the parts of the system not included in yesterday’s site visit.

Mr. Hardy agreed that the “end use” issues are important to understand. These will be worked into the next field investigation.

Commissioner Buck asked about the timeframe for the next site visit.

Mr. Hardy replied within the next few months.

Commissioner Buck said sooner than later would be great. Short-term fixes may be possible.

Commissioner Beamer said it was great to see the systems in real-life rather than on paper. He said he felt there are some short-term action items, including the issue of “waste” that could be put on a future agenda. These issues need to be dealt with in a timely fashion, particularly when the commissioners are limited to 4-year terms. He acknowledged that the staff is incredibly busy, but encouraged staff to keep the momentum.

4. American Water Works Association (AWWA) HI Regulatory Workshop May 8, 2015, Maui, Kahului Courtyard Marriott

Mr. Hardy announced the May 8, 2015 AWWA workshop. The staff will present on the well construction standards. If the commissioners are interested in attending they can request to participate.

Commissioner Pavao asked if the workshop dealt only with well construction standards.

Mr. Hardy clarified that the well construction standards are part of the workshop, but other issues like water quality will also be discussed.

Chair Case asked if there was an agenda.

Mr. Hardy said “yes.” Staff forwarded the agenda in a previous email to the commissioners. He read aloud the items on the workshop agenda.

C. SUBMITTALS AND BRIEFINGS**4. University of Hawaii/ U.S. Army Garrison Hawaii, Request for Well Construction Variance, PTA 2 Well (Well No. 4738-001), TMK (3)6-7-001:041, Island of Hawaii**

Mr. Hardy introduced Item C4 as a request for a well construction variance. As part of the well construction standards there is a minimum requirement for the annulus (distance between the casing and the drill hole) that must be 1.5 inches. The request is for 0.75 inches. The reason for the minimum standards is to ensure a good seal. If it is less than 1.5 inches there could be bridging and issues with the seal. This particular hole is for an exploratory well and will be drilled via continuous coring, rather than a conventional rotary drill. Continuous coring will provide a better record of the geology of the area. There is a 70% distance (or 500 feet, whichever is less) between the ground surface and water level that the grout must seal. At Pohakuloa Training Area (PTA), the wells can be 3,000 feet. 70% of 3,000 feet would be very excessive. Therefore, the limit is 500 feet. In this case, the applicant is asking for a limit of 250 feet due to the type of coring. Exhibit 1 shows the location of the well. It is in a remote area. There are possibly two perched aquifers. In the well construction standards the applicant must seal the well to prevent communication between different aquifers.

RECOMMENDATION

Staff recommends the Commission approve the variance of HWCPIS 2.6© and (d), subject to the following conditions:

- a) The 9 5/8" casing and the 7" casing shall be grouted without variance, ensuring the first 230' are adequately grouted.
- b) Perched aquifer(s) encountered shall seal the annulus by perforating the casing below the bottom of the perched aquifer and grouting the annulus under positive displacement.
- c) The bottom of the solid casing shall be sealing using positive displacement.
- d) The applicant shall give Commission staff a two week notice prior to any grouting activities, to allow staff to observe grout placement.
- e) If the applicant fails to achieve the goals of proper sanitary and annular sealing through these variances by April 29, 2017, the applicant shall apply for a well abandonment permit and seal the well.

(DISCUSSION)

The applicant, Dr. Don Thomas, gave a presentation on the proposed project. Prior to exploratory drilling on Hawaii Island, there was limited knowledge of the hydrogeology. A research project outside of Hilo revealed freshwater below saltwater. This was a surprise since no one suspected artesian water on Hawaii Island. Below 6,500 feet there were freshwater bearing formations below sea level. No one had anticipated freshwater at these depths. This led to the question about the height of the hydrostatic head within

Hawaii Island to displace seawater. Dr. Thomas explained that he was approached to make measurements across the “saddle” area on Hawaii Island to look at the electrical conductivity below the surface. Electrical conductivity is tied to the saturation of the rock. A cross section through the saddle revealed very similar conductivities. The Army asked Dr. Thomas to drill a test well to see if there was fresh water. It was intended to assess the depth of the water, collect other geologic information, and try to understand the geology within the saddle and how the geology affects the ground water. It was not intended to be a production well. Continuous coring is used to collect this information. The equipment is much lighter than a rotary drill operation. A continuous core collects continuous sections of the rock and even fluid samples. He explained the difference between a rotary drill and continuous coring. A rotary drill causes more damage to the core sample. The damage done to the formation when using a core bit is trivial compared to a rotary drill. There are questions about the perched aquifers and where they are. The drilling will take place in areas we know nothing about. Continuous coring is needed in order to understand the hydrology within any of the Hawaiian Islands. The first test hole revealed perched fresh water at 4,600 feet above sea level. Gravity data for the entire state indicates that this region is a dike complex that contains high level water. Additional geophysical surveys demonstrate similar conclusions. The second bore hole location was selected to verify if the dike impounded system extends over the saddle region. If this turns out to be true, there is a huge volume of water stored on Hawaii Island that was previously unknown. The Army would like to leave the first hole open to alleviate the cost associated with trucking in water. They would also like to drill a production well. In that case, the test well can serve as a monitoring well to assess draw down and the long-term ability to manage the resource. Dr. Thomas suggested the new well could be left open for monitoring purposes – something the Commission desperately needs to help make decisions about managing water resources.

Commissioner Beamer asked about the request for a variance. He noted the subject of perched water and issues with wells that are improperly capped. He asked why the project required a variance from the well construction standards.

Dr. Thomas explained that the equipment used for continuous coring is lighter and requires a smaller coring rig, which does not meet the well construction standards set forth by the Commission. Conventional rotary drilling has higher lift capacity. It would double the cost of the test hole to bring in a larger rig to do the work. More damage is caused when drilling larger diameter holes. Arguably a smaller hole would reduce the possibility of contamination and infiltration.

Mr. Hardy pointed out the smooth edges of continuous coring. He said it would be nice if all wells were drilled this way. In this case, staff is comfortable with Dr. Thomas’ proposal. In Keauhou there are a number of wells drilled prior to 1997 (before the well construction standards) that hit perched aquifers. We do not know if those wells have water running down the outside of the solid casing. Part of the staff recommendation is to allow staff to observe the grout placement.

Commissioner Pavao noted the drawbacks of conventional rotary drilling. He said continuous coring should offer adequate protection.

Commissioner Starr stressed the importance of monitoring wells. However, he said he was concerned about the location and potential damage to the perched water. He asked to see successful examples of the 0.75 inch annulus.

Dr. Thomas said he could not think of any examples. There are no Hawaii companies that do this type of drilling for water exploration.

Commissioner Starr reiterated his desire to see successful examples before approving the request. He said he is concerned that the hole will be too small for a camera to check for leakage.

Mr. Hardy said the camera would need to be specialized. There may be options. Presently the staff does not have such specialized equipment.

Commissioner Starr asked how deep the well would be.

Dr. Thomas replied "5,000 feet." The elevation is 5,100 feet.

Commissioner Starr asked if the well would be drilled to sea level.

Dr. Thomas said "yes." The intent is to make sure the well stays in the basal system.

Commissioner Starr asked what would have to happen for the Army to convert it to a production well.

Dr. Thomas said the diameter is too small for a production well.

Commissioner Starr reiterated his desire to have a camera inspect the well and proof that the technology has been successful in other places.

Mr. Hardy clarified conditions d) and e) in staff's recommendation. The well will be sealed if the applicant fails to achieve the goals of proper sanitary and annular sealing.

Commissioner Starr asked if there was any harm in deferring decision-making for one month.

Dr. Thomas replied "yes." The crew has been mobilized from the mainland and operations have already been delayed.

Commissioner Starr voiced his unease that operations have already been mobilized.

Dr. Thomas clarified that the application was submitted in 2013. The initial review did not raise these issues. If the Commission does not grant the variance, the well would likely be sealed and it would be a missed opportunity for long-term monitoring.

Commissioner Starr restated his concerns including fracking and the current disputes surrounded scientific experiments on or near Mauna Kea.

Dr. Thomas explained that the technology has nothing to do with fracking. The proposed mechanism for addressing the perched aquifers is routine and has been done in many wells.

Commissioner Pavao said he would vote in favor of the application. He said it would provide information about the geology of Hawaii Island. Everything that is being proposed has been done before, with the exception of the small core. He assured the

other commissioners that the annular space will be filled. This project is too important to delay or give up.

Mr. Hardy clarified the cementing process.

Commissioner Antolini said she appreciates the intent of the project. She asked how contamination would be detected and if a camera could detect it.

Mr. Hardy said any kind of contamination would be detected in the water. The grouting is used to protect the well from surface runoff and seepage. It would be difficult to detect contamination inside the annular space.

Commissioner Antolini asked how contamination between different aquifers would be discovered.

Dr. Thomas replied there can be contamination from surface runoff and/or communication between two aquifers. The only way to determine if contamination is occurring is to monitor the chemistry in the water in the water table. The potential for communication among perched aquifers can be assessed during the drilling process. Once the hole is drilled, cement can be squeezed into the perforated casing to fill any pukas.

Commissioner Buck asked if conditions should be added about using the well for long-term monitoring.

Mr. Hardy apologized. Monthly water use reporting is part of the standard conditions of the permit and should have been attached to the submittal.

Commissioner Buck asked if the State would inherit the monitoring well.

Mr. Hardy said Dr. Thomas is amenable to using the well for long-term monitoring.

Commissioner Buck said it is important to include the standard conditions in future applications, but said he was open to approving the variance.

Mr. Hardy said there was some miscommunication with staff and Dr. Thomas about addressing the sub-standard conditions, including the late notification of the need for a variance.

Commissioner Starr asked if there were examples of pumping cement into perforated casings.

Dr. Thomas said this was done in the first test well. This is a common practice in Hawaii.

Commissioner Starr asked if this had been done in narrow wells like the one being proposed.

Dr. Thomas replied this is the fourth well that has been drilled in Hawaii. The issue has not been raised in the past.

Commissioner Beamer asked why Dr. Thomas previously told the commissioners that there were no Hawaii examples.

Dr. Thomas clarified that there is no company in Hawaii that does this type of deep drilling. They have been done almost exclusively for research. A few holes have been drilled for geothermal in Puna. The technology is largely used worldwide for mineral exploration. Perched water is not an issue for mineral exploration.

Commissioner Pavao reminded the commissioners that it will not be a production well. It is purely for exploration and will provide important hydrologic information. The contamination factor is mute. No one will drink this water. As a monitoring well it can only provide valuable information.

Commissioner Starr asked if an Environmental Assessment (EA) or Environmental Impact Statement (EIS) was done.

Dr. Thomas answered "yes." It was completed in early 2014.

Commissioner Starr asked why the submittal failed to include the Chapter 343 disclosure document.

Mr. Hardy said it could be provided to the commissioners.

Commissioner Starr reiterated his request to defer decision-making until next month.

Chair Case asked about the cement casing.

Mr. Hardy said the perforating the casing and cement will be applied below 230 feet where needed.

Chair Case asked about contamination.

Dr. Thomas said the Army has no intention of using it as a production well. The primary purpose is to demonstrate that perched water extends over a substantial portion of the saddle region.

Chair Case asked about the four other wells.

Dr. Thomas said the other wells have been closer to sea level and the grouting requirements were not an issue.

Mr. Hardy said the other wells at lower elevations have more potential for contamination than the proposed well.

Commissioner Pavao pointed out that the well could have been drilled with a rotary drill. However, continuous coring will provide more valuable information at a greater expense. 230 feet will be in accordance with the standards. The long-term benefits of the well are worth the variance.

Commissioner Beamer asked if the cost prompted the request for a variance.

Dr. Thomas answered the continuous coring will be less costly.

Commissioner Starr asked about the recourse for approving a permit without the Chapter 343 disclosure document.

Deputy Attorney General (AG) Colin Lau said he could not advise the public on recourse. However, the commissioners can ask for a deferral if they believe there are insufficient facts.

Commissioner Starr said he would like to see the document.

Deputy AG Lau said the commissioners can approve if they trust the information provided by the applicant.

Mr. Hardy confirmed that an EA/EIS was completed. He said it should have been included with the submittal.

Commissioner Antolini asked about the accepting agency.

Dr. Thomas said the University of Hawaii (UH).

Commissioner Pavao said it was ironic that the Commission complains about the time it takes to get things done, yet here it is delaying the process.

Commissioner Starr said if the documents were provided it would not be an issue.

Don Heacock testified on the variance. He expressed concern that the EA was approved by UH and suggested the Commission wait to approve.

Tim Kallai asked about the stress test with the smaller diameter.

Commissioner Antolini made a motion that the Commission defers the request for a variance to the May 2015 meeting, include the EA and Finding of No Significant Impact (FONSI) to the staff re-submittal, and invite the applicant to address the Commission's concerns in writing two weeks prior to the meeting.

Commissioner Starr asked staff to reiterate the concerns that were raised during the discussion.

Mr. Hardy stated the EA would be included in the re-submittal.

Commissioner Starr added the inclusion of proof of concept in Hawaii volcanic soils in regards to the 0.75 grouting and a mechanism for the State to use a camera to periodically visually survey the well and others like it.

Mr. Hardy said it could be difficult to obtain a specialized camera.

Commissioner Beamer suggested that the camera be added as a condition to the permit. He said he was worried that approving the variance would set precedence for other applicants. The camera could be used to identify any perched water that could be leaking.

Commissioner Starr noted the importance of cameras.

Mr. Hardy it will take time, but the staff can investigate options.

Commissioner Antolini added Commission Starr's comments to her amended motion.

Chair Case noted that the proof of concept is mainly concerned with the potential impact of a new technology involving a new water source.

AMENDED RECOMMENDATION

That the Commission defers the request for a variance until the May 2015 meeting:

- a) Include the EA and Finding of No Significant Impact (FONSI) with the staff re-submittal,
- b) Invite the applicant to address the Commission's concerns in writing, including proof of concept (particularly with regard to risk of contamination and inter-aquifer communication) and feasibility of camera inspection, at least two weeks prior to the meeting.

Commissioner Buck asked the applicant if he had any further comments based on the amended motion.

Dr. Thomas replied "not at this point."

Commissioner Buck asked if the applicant would proceed with the project in light of the new motion.

Dr. Thomas said he would have to consult with staff about options.

Commissioner Pavao said he would vote against the motion. The Commission is causing an unnecessary delay.

Commissioner Antolini said she changed her mind when she heard Chapter 343 was not complied with. A state agency must comply with Chapter 343 even when they are not the accepting agency. The request for a variance is unusual. Therefore, the Commission should proceed cautiously and comply with the law.

Commissioner Beamer thanked Dr. Thomas for his work and said his decision to defer is not judgmental.

Chair Case said she supports the use of exploratory wells and reiterated Commissioner Antolini's comments about taking a precautionary approach.

MOTION: (Pavao / Starr)

To defer the application and approve the amended recommendation.

Case, Antolini, Buck, Beamer, Starr = aye; Pavao = no

APPROVED.

1. Request to Authorize the Chairperson to Enter into Joint Funding Agreements with U.S. Geological Survey To Conduct a Study on Low-Flow Characteristics for Streams In Southeast Kaua'i, Hawai'i

Rebecca Alakai (Planner, Stream Protection and Management) introduced Item C1. The study area is shown in Figure 1 and extends from Wailua to Hanapepe. The Commission is responsible for establishing Instream Flow Standards (IFS) on a stream by stream basis to protect the public interest and the waters of the State. When the Water Code was created in 1987, the IFS were set at status quo, defined as the amount of water flowing in each stream with consideration for natural and seasonal variability. In the Waiahole Contested Case, the Hawaii Supreme Court held that the status quo for Interim IFS was not adequate to protect the streams. The Hawaii Supreme Court also emphasized that IFS served as the primary mechanism by which the Commission exerts its duty to protect and promote the entire range of public trust purposes, which are dependent on IFS. In establishing IFS, the Commission must analyze the importance of present and future instream values with consideration for non-instream uses, including the economic impacts of restricting such uses. The complexity of establishing IFS lies within the local surface water conditions that include rainfall, geology, topology, human impacts and the reliability of that information. The history of large scale sugar cultivation in southeast Kauai by Lihue Sugar Plantation, Grove Farms, Koloa Plantation, McBryde Sugar, and other sugar companies has left an extensive and complex irrigation systems that continue to serve municipal, hydropower and agriculture uses. Over the past several years the Commission has received several complaints about streams in the region. In addition, the USGS has worked the Kauai Department of Water (KDWS) to assess ground water hydrology in the southern Lihue basin. This combination of issues has made it ripe for the assessment of IFS by the Commission.

Chui Ling Cheng (Hydrologist, USGS) went over the scope of the services and funding. The study objectives include 1) quantify the stream flow availability at selected stream locations (natural flow without any diversions) and 2) look at the ground water and surface water interaction in these selected stream reaches. Streams gain and lose water depending on the position of the ground water table in relation to the stream bed. This will help determine whether or not these streams support mauka to makai flow. The primary objective of the study is to help establish IFS for southeast Kauai. Data is needed to establish the IFS that accurately reflect the current hydrology of the area. Surface water availability is often described as duration discharges. In other words, the likelihood of a flow occurring. Median flow is a common statistic used to determine what the flow will be 50% of the time. Another common duration statistic is Q95. Q95 means that 5% of the time the flow in the stream will be less than the Q95 amount. The low flow study is interested in quantifying the amount between Q50 and Q95, also called the low flow range.

Three types of measurements will be used. First, continuous record gaging stations will provide real-time data that is available on the USGS website. Second, partial record sites will also be established as part of the study. Partial record sites provide instantaneous measurements that are made repeatedly during low flow periods. Third, seepage run sites will tell whether the stream is gaining or losing and by how much. There are currently four USGS continuous record gaging stations within the study area. There is limited data on the natural flow. Landowners in the study area

include the State and Grove Farm. USGS has begun communication with Grove Farm to better understand their diversion system and the location of partial record sites where data can be collected. The first step is to collect data, then develop a statistical relationships between the data at the partial record sites to the continuous record gaging stations. This statistical relationship will help determine the flow duration estimates (Q50 and Q95).

Potential locations for collecting data have been identified. USGS staff will measure the flow at these partial record sites 10 to 12 times. The measurement sites will be located above the Grove Farm ditch. The seepage runs must account for all the in-flows and out-flows in the stream channel to accurately measure the gains and losses of each stream. The study will be conducted over four years and include 2 ½ years of field work. The study will cost \$707,000. USGS will cost share 30% of the total cost. USGS will prepare report that documents the methods and the results of the study. Similar studies have been done with DHHL in Anahola. Completed USGS reports are available on the USGS website at www.hawaii.water.usgs.gov under featured publications.

Commissioner Starr asked how the study will account for diversions and the effect on surface water from ground water exploitation.

Ms. Cheng said the study would not look at the effect of ground water exploitation on stream flow. However, the seepage run measurements will reflect how much water is diverted from each stream. These studies will not measure every diversion.

Commissioner Starr asked if the measurements will be below the highest diversion.

Ms. Cheng replied "yes." Seepage runs include measurements above, at and below the diversion. These measurements will not provide information about the diversion amounts. It is point data.

Commissioner Beamer asked when measurements would be taken.

Ms. Cheng answered that the measurements would be instantaneous based on stable flow conditions on a particular date. Sometimes measurements must be made on two consecutive days.

Commissioner Buck asked if private landowners allow access for the studies.

Ms. Cheng said in Lahaina and Anahola "yes." In southeast Kauai, Grove Farm is supportive.

Commissioner Buck asked specifically about the Robinson family.

Ms. Cheng said she had not reached out to the Robinsons, but there is a gaging station in Hanapepe.

Commissioner Buck said 174C-5 gives the Commission the authority to enter private land for conducting studies. He asked if this would apply to the USGS.

Deputy AG Lau said he thinks it would apply.

Commissioner Buck requested that the preliminary data be made available prior to the final report.

Ms. Cheng said all the data will be available on the USGS website as the study progresses.

Commissioner Beamer said the Commission can help with land access if it becomes an issue.

Ms. Cheng said “thank you.”

Commissioner Antolini said these studies should be done everywhere. She asked how many have been done statewide.

Ms. Cheng replied Anahola, Na Wai Eha, Lahaina, East Maui, Punaluu on Oahu, and Waipio on Big Island.

Commissioner Antolini said the Commissioner should commit an equal amount of resources and staff time to the instream flow questions.

Commissioner Starr commented on future investigations about diversions, land use, and pumping.

Commissioner Antolini clarified that her request was focused on the public trust purposes – instream flow, DHHL, traditional and customary rights. These issues need the same amount of investigation, research and investment from the Commission.

Chair Case said the USGS study will inform the overall analysis.

Commissioner Antolini agreed it provides a good foundation.

Commissioner Buck encouraged the public to provide any information they have on traditional and customary practices in their area.

Don Heacock said he has worked with the USGS. Stream ecosystem science is a multi-disciplinary approach. Monitoring of the biota is also needed. He pointed out the flaws of an East Maui USGS study that looked at the impact of diversions on the native stream animals. Migratory stream animals such as o‘opu have evolved to climb waterfalls. When they approach areas without water, they wait and eventually suffocate when the water heats up. The Hawaii Stream Assessment Bio-Protocol measures stream flow, sediment loads, diversions, and the abundance of native species in order to measure the biological health of Hawaii’s streams. This study will not solve why the o‘opu nakea are disappearing. These species represent a snapshot of the biological health of the streams. He encouraged the Commission and the Division of Aquatic Resources (DAR) to communicate.

RECOMMENDATION

1. Staff recommends that the Commission authorize the Chairperson to enter into a Joint Funding Agreement between the Commission and the U.S. Geological Survey to conduct a Study on Low-Flow Characteristics for Streams in Southeast Kauai, Hawaii from June 1, 2015 to June 30, 2017 (Period 1)
2. Staff recommends that the Commission authorize the Chairperson to enter into a subsequent Joint Funding Agreement (Period 2) between the Commission and the U.S. Geological Survey to continue to conduct a Study on Low-Flow Characteristics for Streams in Southeast Kauai, Hawaii from July 1, 2017 to April 30, 2019.

**MOTION: (Buck / Pavao)
To approve the recommendation.**

Commissioner Antolini offered an amendment to the motion and asked that it recognize the request is exempt from environmental review (Chapter 343) and the exemption was disclosed in the staff submittal.

**AMENDED MOTION: (Antolini / Starr)
To approve the amended recommendation.
APPROVED.****2. Briefing by Kekaha Agriculture Association (KAA) on the operational aspects of the Kekaha and Koke'e Ditch Systems**

Doug Codiga, the attorney representing KAA, introduced Landis Ignacio (Land Manager, KAA) and Basil Gomez (Hydrologist/Consultant, KBay Environmental Services).

Commissioner Starr asked if anyone from the Agribusiness Development Corporation (ADC) was present.

Mr. Codiga said Jimmy Nakatani from ADC was here but had to return to Honolulu. He thanked the commissioners for devoting their attention and time to the issues. The presentation will provide an overview of the ditch systems and agricultural infrastructure. He began with the history and role of KAA. The sugar company ceased operations in 2001. KAA was formed in 2003 as an agricultural cooperative under HRS Chapter 421 with the purpose to promote effective and compatible agriculture and aquaculture business uses on the ADC lands. When the sugar company closed, KAA took on the responsibility of managing, operating, maintaining, and repairing the infrastructure (ditch systems, drainage, electricity, roads). He handed out a map of the ditch systems and Mana Plain. The system provides for water delivery, storage, drainage as well as hydropower. The system benefits agriculture as well as the public. Mr. Codiga gave an overview of the Kōke'e and Kekaha Ditch systems. The systems are physically connected. 40 miles of canals and ditches service the Kekaha region. This includes pumping stations, ravines, drainage channels, and electrical and mechanical equipment. The pumps lower the ground water table on the Mana Plain to allow for farming. The hydropower generates electricity and the power used to run the pumps. The pumps

also help transport water for irrigation. The two hydropower plants are the Mauka hydro originally built in 1911 and the Waiawa hydro built in 1908. KAA also maintains 29 miles of electrical distribution lines. The two KAA hydros supply 10% of the Kauai Island Utility Cooperative's (KIUC) renewable energy. Mr. Codiga stressed that KAA is working collaboratively with all the stakeholders to address the issues raised in the petition. He share KAA's planned improvement projects. KAA has spent approximately \$8 million on ditch system and agricultural infrastructure improvements.

Commissioner Buck asked if the \$8 million includes both public and private funding.

Mr. Codiga says the funding comes from KAA member fees.

Commissioner Beamer asked how much water would remain in the Waimea River during the Black Pipe Siphon replacement project.

Chair Case said she thought the capacity of Kekaha Ditch was 50 mgd, but not that much is taken out.

Mr. Codiga said "correct." Kekaha Ditch currently diverts much less than 50 mgd. After the improvements the system will have a maximum capacity of 23 mgd. Other improvements include ditch cleaning, removing silt, rocks, and trees, repairing leaks, replacing lumber on tunnel openings, and more. The Menehune Ditch pipeline will be replaced to help support taro farming. He went on to describe various other improvement projects scheduled for 2015. There have been major reductions in water diversion and use since the plantation era. The Kekaha Ditch system is monitored at the Hukipo flume and the readings are reported to the Commission. The Waiawa hydro uses 21 mgd to operate the pumps that keep the ground water table low enough for farming. The Waiawa hydro also helps operate the drainage system to prevent flooding of local communities and the pumps to move irrigation water for farming.

Commissioner Buck asked if the 21 mgd was needed at the Waiawa hydro for essential functions.

Mr. Codiga replied "correct."

Commissioner Pavao asked about the type of hydro plants.

Mr. Codiga said "pelton wheel."

Commissioner Pavao asked if KAA considered in-line turbines.

Landis Ignacio said it was a matter of cost.

Mr. Codiga continued his presentation. During the plantation era 31.1 mgd was diverted and used by the Kekaha system. The current monthly average is 22.7 mgd. This is a 27% reduction in water diversion and use. KAA activities are not using as much as was used during the plantation era.

Commissioner Starr asked if the reduction in use could be attributed to waste.

Mr. Codiga replied KAA assumes it is not waste. The term diversion and use is equivalent to reasonable and beneficial use. However, KAA understands that this idea is being challenged by the petitioners.

Commissioner Starr asked if the diversions in the upper Kōke'e system are diverting less water.

Mr. Codiga said "yes, absolutely." KAA is diverting only what it needs to use. Based on the available records from 1980 to 1999, the Kekaha system was diverting 31.1 mgd. From 2003 to 2015 the Kekaha system has diverted an average of 22.7 mgd.

Commissioner Antolini asked what points are being measured to generate the total mgd number.

Mr. Codiga said the Hukipo weir is used for the Kekaha system.

Commissioner Antolini asked if it was a single point.

Mr. Codiga replied "correct."

Commissioner Starr asked how the reduction was achieved.

Mr. Codiga said manipulation and adjustment of the diversion structures.

Commissioner Starr said that would be good to see on a future site visit.

Commissioner Buck asked about users before the Hukipo flume.

Mr. Codiga said they use about 2 mgd. KLC is a waste water treatment plant. The diversions partly supply the needs of this facility. Similar reductions in water use have been made on the Kōke'e Ditch. Flow is measured at the Pu'u Lua Reservoir and readings are reported to the Commission. The monthly average water use during the plantation era was 15.2 mgd. The KAA monthly average today is 8.3 mgd, which equals a 45% reduction in water diversion and use. Mr. Codiga touched on the waste allegations raised in the petition. The Petition alleges waste and calls for amendments to the IIFS. KAA is working collaboratively to get to the bottom of these issues and is open to Commission guidance. It is understood that the Commission would first address the allegations of waste. The investigator (Steve Spengler, Element Environmental) was hired and has provided a preliminary briefing on the consultant's report. Once final, the Commission would take action on the waste allegations based on the findings in the report. KAA would like to understand the Commission's intentions with regards to IFS. This could affect how KAA operates and maintains its infrastructure. Mr. Codiga asked if the process he outlined is correct. He noted the complexity of the system and certain misunderstandings. He quoted page 30 from the Petition which alleges that KAA continues to divert water that is comparable to the plantations. He stressed that this allegation is not true. He emphasized the need for shared understanding about the facts. KAA believes that in order to maintain basic operations, they cannot divert less water. The height of Pu'u Lua Reservoir is a public health and safety concern. Water in the Kōke'e system will be used by taro farmers during the Black Pipe Siphon replacement. A minimum of 2

mgd is needed to help prevent sediment build-up in the system. These realities are based on many years of operating experience. Questions have been raised about the "fake" waterfall at Waipoo Falls. Some in the community think the waterfall provides a visual asset to the area. If the water is spilled at Kauhao Gulch, the water will enter a different watershed. Spillage is needed to maintain the 60 feet height limit at Pu'u Lua Reservoir. KAA does not view any of their activities as waste. Mr. Codiga admitted that the 2 mile stretch of dry stream bed along the Kekaha system is not ideal. KAA is always looking for ways to improve or modify the system. He reiterated the need for a letter from the Commission so KAA can respond to questions about water use, crop type, etc.

Commissioner Pavao asked how KAA controls water levels at the Pu'u Lua Reservoir.

Mr. Ignacio explained the reservoir is non-compliant and there is no overflow, which is why the levels must remain at 60 feet. The reservoir does not have a spillway. The Kauhao Sluice Gate controls the amount of water that enters the reservoir. It is controlled manually. The DLNR is responsible for the reservoir.

Commissioner Starr asked why DLNR is operating a non-compliant and potentially dangerous reservoir.

Mr. Codiga said he was not prepared to answer that specific question.

Commissioner Beamer thanked Mr. Codiga for his willingness to work openly and collaboratively. He asked if the sugar plantation pumped water out of the Mana Plain.

Mr. Ignacio said "yes." Sugar used a lot of water. Drills and shafts existed on the Mana Plain. As part of the settlement with Amfac, the wells were ordered to be sealed. Hydro power was also used by the plantations to pump water out of the Mana Plain.

Commissioner Pavao asked if the Pu'u Lua Reservoir has an earthen bank.

Mr. Ignacio explained that the reservoir is regulated by DLNR. The intent was to transfer it to ADC, but that never happened. ADC sought to correct the problem and upgrade the reservoir, until they realized that DLNR still owned the reservoir. KAA has no legal obligation to maintain the water levels at the reservoir.

Commissioner Buck asked if KAA was a non-stock co-op.

Mr. Codiga replied "yes."

Commissioner Buck asked if the water dynamics would change if there was an alternative source of electricity and no hydro.

Mr. Codiga said "maybe." The end users will still need water.

Commissioner Buck asked if DHHL would be able to receive water without the Kōke'e Ditch.

Mr. Codiga replied the Kōke'e system delivers water to DHHL.

Commissioner Buck asked about potential solutions for addressing the 2 mile stretch of dry stream in Waimea Canyon.

Mr. Codiga said the solution is not clear. It will need to consider public health and safety issues surrounding drainage and hydro.

Commissioner Buck encouraged KAA to think about this issue and share their thoughts with the Commission. It is a key issue.

Commissioner Pavao asked if the water used for the Mauka hydro goes back into the Waimea River.

Mr. Codiga replied "correct." Water is diverted for hydro power to generate electricity to run the drainage pumps and provide for irrigation.

Mr. Ignacio explained water is diverted to feed the Mauka hydro and continues downstream to the Waiawa hydro plant.

Chair Case asked if the water pumped out of the Mana Plain could be used for waste water treatment.

Mr. Codiga said he did not know. That option has not been explored.

Basil Gomez said the waste water treatment plant uses 700,000 gallons per day. Two-thirds are provided by the Kekaha Ditch. The water is also used by agriculture users.

Chair Case asked if the waste water treatment discharge is used for irrigation.

Mr. Gomez replied "yes." The water pumped out of the Mana Plain is brackish and not suitable for irrigation.

Commissioner Antolini asked about the quantity of the discharge from the Mana Plain and the quality.

Mr. Ignacio said KAA does not have the answer. The National Pollutant Discharge Elimination System (NPDES) permit is under ADC.

Commissioner Antolini asked if there was an NPDES permit for the other two points of discharge.

Mr. Ignacio said "yes." Kinikini ditch is the major outfall. It is covered by the NPDES permit.

Commissioner Starr asked to see the quantities of the discharge, copies of the NPDES permits, and any known pesticides used by agricultural users on ADC land.

Commissioner Beamer asked if all the power generated by the hydro goes toward draining the Mana Plain.

Mr. Codiga replied "no." Excess power is sold to KIUC (10%). Some of the power is used to run the agriculture infrastructure. Revenue to the co-op must be used for State capital improvement projects.

Commissioner Beamer asked if KAA could distinguish the needs for the hydro from irrigation.

Mr. Codiga reiterated the need for a letter from the Commission.

Commissioner Beamer asked if the information was proprietary.

Mr. Codiga said the word "proprietary" may have been used by the petitioners. The information requests would need to be reviewed by the KAA members. He understood the data is important in order to make decisions. He surmised that less water is used for irrigation versus hydro.

Chair Case asked how much hydro power is used for pumping versus sold to KIUC.

Mr. Ignacio noted the deficiencies in the system. Old analog electric meters were recently replaced with digital meters in an effort to better account for water usage. This was not a priority until recently.

Commissioner Pavao asked about the KAA staff.

Mr. Ignacio said "himself." KAA also uses contractors. The system is extensive. KAA is listening and hears the concerns of the community. KAA is willing to take a closer look to find a solution.

Commissioner Starr asked for a map of the lands leased by the KAA members and sub-leases, including acreage and water use.

Mr. Ignacio said KAA does not lease lands to its members. KAA is responsible for the infrastructure. The members have licenses with ADC. KAA is the caretaker.

Commissioner Starr reiterated his request.

Commissioner Beamer commented on the waste allegations. He questioned how KAA/ADC can argue that the water use is reasonable and beneficial when they cannot provide information and data on water use. The data is important for decision making. He said the Commission will work on a letter.

Mr. Codiga said the letter is purely procedural to advance the discussion among the members. KAA believes there is no waste and the use is reasonable and beneficial. The report may say otherwise.

Commissioner Beamer asked why KAA does not track water use among its users.

Mr. Codiga said KAA does not currently track water use. The co-op is moving toward pressurized irrigation. It is a \$20 million expense. KAA understands that the information is important. A pressurized system will lead to better efficiencies and less water will be diverted.

Commissioner Pavao asked how KAA knows how much water to divert if it does not know how much water is being used.

Mr. Gomez explained why it is not practical to measure water use among individual users. A certain amount of water needs to go to the hydro plant. The water is delivered to agricultural users and deposited into field reservoirs. Water is pumped out of the reservoirs at different times and at different amounts.

Commissioner Pavao asked if the diversion amount is based on the optimal amount needed to run the hydro.

Mr. Gomez said the water continues on after the hydro to service the agriculture users. On average the amount of water needed to operate the hydro is what is needed to irrigate. The output of the hydro plant fluctuates based on rainfall.

Commissioner Pavao said the primary concern appears to be electricity production and not irrigation.

Mr. Gomez replied, one relates to the other.

Mr. Codiga said the water is being used for irrigation, but the uses are inter-related.

Commissioner Antolini clarified that water from the hydro fills the reservoirs and KAA is not monitoring how much water is taken from the reservoirs.

Mr. Ignacio said that is correct. Approximately 2 mgd is used by kuleana users. There is also some leakage as water travels to the reservoirs.

Mr. Gomez said it takes half a day for water to travel to the last reservoir.

Commissioner Antolini asked if the ditch and reservoir are lined.

Mr. Codiga said unlined and there is loss.

Mr. Ignacio said efforts have been focused on maintaining infrastructure outside the property. KAA recognizes that other improvements need to be made to improve efficiency and reduce costs. Everything takes time and money, but KAA is open to finding solutions and making sure everyone has water. It is important to work together and support your neighbors.

Commissioner Antolini asked how KAA charges its users.

Mr. Ignacio said members are charged a maintenance fee based on acreage. A new modernized pressurized system will help monitor water use.

Commissioner Starr said he was astounded that water use is not monitored.

Mr. Codiga reminded the Commission that the system is over 100 years old. Repairs are needed but cost money. KAA is doing the best it can under the current circumstances. It is looking into opportunities to improve the system.

Mr. Ignacio said KAA recognizes the importance of monitoring water usage and hopes to get to that point. Other irrigation systems in Hawaii are also falling apart. KAA has limited resources but is doing the best it can. He asked the commissioners to imagine what would happen if KAA packed up and left. KAA does a better job than the State. KAA is doing all it can and wishes it could do more.

Commissioner Starr asked if monitoring could be done without the use of a pressurized system.

Chair Case said part of the process should involve pin pointing the most useful pieces of information.

Commissioner Starr recommended that KAA/ADC come up with a list of suggestions to reduce take, increase efficiency and address the allegations of waste.

Commissioner Pavao expressed his appreciation for Mr. Ignacio's dedication and hard work.

Commissioner Beamer also thanked Mr. Ignacio and Mr. Codiga. The process does not need to be adversarial, but the Commission must uphold the public trust.

Commissioner Antolini said the Commission would draft a letter to KAA with a request for information.

Chair Case expressed her desire for a collaborative process.

David Henkin (Earthjustice, representing the petitioners Po'ai Wai Ola) testified on a couple key points. He went over some of the data collected by Steve Spengler. 21 mgd was measured at Hukipo Flume. Some of the 21 mgd is lost to the river. The actual amount that travels outside the watershed is less than 21 mgd. He refuted the claim that KAA takes less water than the plantations did. The Koaie and Waiahulu diversions take every drop of water in the Waimea River. Steve Spengler recorded the amount as 32 mgd. This water is run through the Mauka hydro plant to generate 1.2 megawatts. The diversions take every drop of water, just like the plantations. 10 mgd is dropped back into the Waimea River below the Mauka hydro, but large stretches are still de-watered. This is a public system using public water. The Black Pipe Siphon replacement does not change the amount of water that is being diverted. There are questions about public trust water being used for agriculture and electricity. He questioned the measurement points along the Kōke'e system. He explained how much water gets diverted from Kawaikoi, Waiakoali, and Kauaikinanā Streams, which are virtually de-watered. They are dry because of their diversions. This water is not used and is dumped over the falls at Kōke'e Stream (6.8 mgd). Earthjustice met with staff in February 2015 to develop a proposal about restoring flow to the headwaters. There may be a use for the water by DHHL in the future, but it is currently being wasted. Mr. Henkin went on to describe what he considers other "wasteful" practices. He pointed out that fixes can be made before the final report. He requested that the letter to KAA be sent as soon as possible. Transducers can be installed on the Kekaha Ditch at Hukipo Flume and Kauhao Sluice to detect how much water is leaving the watershed to inform the waste complaint and provide valuable information.

Commissioner Starr asked Earthjustice to provide a letter with recommendations and solutions.

Commissioner Beamer asked Mr. Henkin if he considers agricultural water use on the Mana Plain part of the public trust.

Mr. Henkin said it relates to the public trust doctrine, but the Commission needs to decide what is reasonable and beneficial and what is wasted and put to no use. Using water to irrigate agriculture can be a beneficial use and would not constitute "waste." However, there may be alternative sources of water that can be used for that purpose that do not require diverting water from the Waimea River. The different interests and public trust uses must be balanced.

Chair Case said it seems like certain public trust uses (IFS, DHHL reservations, traditional and customary rights) require an independent analysis that is separate from the waste complaint.

Mr. Henkin said "yes, they are separate questions."

Commissioner Beamer asked how hydro power enters into the conversation about public trust uses.

Mr. Henkin replied the Hawaii Constitution and case law are pretty clear about what is a public trust use. However, just because something is not a public trust use does not mean that use is not important. Food and energy are social goods, but that does not make them a public trust use. Public trust uses should be prioritized.

Commissioner Buck asked how to balance two competing public trust uses – water in its natural state and water reservations for DHHL.

Mr. Henkin said currently there are not water reservations for DHHL.

Commissioner Buck noted that water reservations are forthcoming. DHHL will need water in the future.

Mr. Henkin agreed and said Po'ai Wai Ola supports putting Hawaiians on the land and getting water to DHHL. The challenge is to fix a system that is currently wasting water and not putting it toward public trust uses.

Commissioner Pavao said the current system serves an important function.

Mr. Henkin suggested the system be managed in a different way. He noted specific places where changes could be made.

Commissioner Pavao said perhaps certain things are done to keep the system functioning.

Mr. Henkin questioned that logic. An engineer should be able to determine what is feasible.

Commissioner Starr talked about the tragedy of the commons. Former wetlands such as the Mana Plain could be restored.

Mr. Henkin said the future of Mana Plain requires long-range thinking. This question does not need to be answered to fix the waste issue and putting more water back in the Waimea River. There are short-term solutions.

Commissioner Antolini asked about next steps. She described the timeline of events since July 2013 when the petition was submitted and what could be done in the short-term. Mr. Spengler's investigation is ongoing and should be complete by the end of 2015. There is a lot of room for collaboration. She talked about the different pathways. One option is the Commission could continue to collect information and then make a decision at a properly noticed meeting. The Commission could also appoint a hearing officer or mediator. A mediator is allowed outside of a contested case. Peter Adler was very instrumental during the Waiahole Contested Case in fostering collaboration. Alternatively a "master" could be appointed. There are many pathways – mediation, appointing a hearing officer, and/or requesting more information. She encouraged the Commission to explore alternative options to assist the Commission since we only meet once a month. She said the Commission could move on some of these suggestions before Mr. Spengler's final report at the end of the year.

Chair Case said talking about next steps is very important. She suggested gathering information (biology of the stream, instream and downstream uses, etc.) as part of the IFS process. The waste issue seems like a longer process. She asked for a dialogue with the parties to determine what actions could be taken quickly and the bigger issues.

Commissioner Beamer said in the two years since the petition was filed, he learned the most during the site visit. It would have been more efficient if the site visit was done earlier in the process. The key question is what the public trust uses are, and are they being maintained. He welcomed conversation with the stakeholders. We need information about the agriculture users on the Mana Plain and if their use is reasonable and beneficial.

Chair Case agreed that the public trust uses and appropriate allocations need to be identified first.

Commissioner Pavao liked the idea of sitting down and talking with the parties.

Mr. Henkin said the parties have talked with staff. There has been a lot of talking and some exchange of information. Since the petition was filed in 2013 nothing has changed. Earthjustice has made clear what needs to be done. The Commission needs an item before them in order to take action. Some potential solutions require more conversations to understand the pros and cons. Ultimately, the Commission needs to make a decision about the allegation of waste before KAA is forced to make changes. IFS proceedings tend to take more time.

Commissioner Buck agreed it is the duty of the Commission to provide some direction. The viability of the entire system is an important question. He asked to hear from KIUC.

Mr. Henkin suggested the Commission issue an order for KAA/ADC to explain their view of the allegations.

Commissioner Buck said the best option is for the Commission to provide some direction and solve the issue at the community-level rather than through a contested case.

Commissioner Pavao suggested the parties talk to Commission staff. Ask the hard questions.

Kipukai Kualii testified as a Native Hawaiian beneficiary and homesteader from Anahola. He said he supports the four public trust purposes, especially traditional and customary rights. He comes from a family of salt makers and former taro farmers. He talked about the homestead associations. DHHL has failed at giving out agricultural awards. His number on the waitlist is 124. He stressed the importance of using homestead land for agriculture and farming. The land is not being awarded because there is no water.

Robin Danner (President of the Mokuuni Homestead Association) said there are 4,500 Hawaiians on the waitlist for Kauai. 2,500 are waiting for farms and ranches. Of the ~45,000 acres of agriculture land on Kauai, 20,000 acres belong to DHHL. Most of the agriculture lands in West Kauai were formerly in sugar— including lands put in the Hawaiian Home Lands Trust by the Territory. She has been on the waitlist for an agricultural lot for 32 years. She recounted the number of years other people have been on the waitlist. This issue is significant to the Hawaiian community and DHHL beneficiaries. DHHL is not the trust. They are supposed to implement the trust. ADC is also a trustee with a fiduciary responsibility to hold up the public trust purpose. Do not wait for DHHL. The Commission can act and ask Mr. Spengler what the proper reservation of water is for the 17,000 acres of DHHL land. She pointed out the revenue generated through the sale of hydro power is public money. Once a water reservation is established, DHHL can put people on the land.

Sherri Cummings (DHHL beneficiary, Vice-President of the Sovereign Council of Hawaiian Home Lands Assembly, Vice-President of Anahola Hawaiian Homes Association) advocated for a shorter waitlist. She thanked the commissioners for coming to Kauai and encouraging the community to be part of the process. DLNR and DHHL are two of the largest land owners in West Kauai. She recounted her family history and connection to the land, water and sugar plantations in Hawaii. She requested to be part of a positive process. DHHL beneficiaries have an interest in water even if they are not on the land.

Ms. Danner said she would work with DHHL Deputy Director Aila and corrected the assertion that DHHL does not have money. Trust funds were established by the Hawaiian Homes Commission Act. Do not count us out. DHHL beneficiaries want to farm the land. She asked the commissioners to consider their fiduciary duty under the Admissions Act.

Mr. Kualii said the community is empowered and appreciates the work of the Commission.

Commissioner Antolini mentioned the point raised by Ms. Danner about the Commission's ability to act prior to a formal water reservation request from DHHL. She asked if the community has petitioned on its own.

Ms. Danner said the community has looked into it, but was hoping the Commission could do the water reservation analysis.

Commissioner Antolini asked Ms. Danner to put that request in writing.

Ms. Danner said she would submit something in writing.

Commissioner Beamer said the Commission could consult with the AG and review the Water Code about being more proactive rather than reactive.

Commissioner Starr said he was also open to the idea.

Commissioner Antolini advised that the letter reference HRS 174C-101.

Commissioner Buck noted that the estimates are not rocket science.

[Break]

Don Heacock (Fisheries Biologist, DLNR Division of Aquatic Resources) testified as a fisheries biologist and taro farmer. He agreed that all irrigation systems should be in a pipe to prevent water loss. When the balance of justice is looked at, there is a finger on the public trust uses. The current ditch and irrigation system is a function of sugar. Historically the Waimea River provided instream benefits to kanaka maoli. He stated the public trust uses including appurtenant rights for taro farmers. Native stream animals such as o'opu nakea are important to Native Hawaiians. He relayed the significance of ahupua'a land management. If the pumps were turned off, the Mana Plain would be restored to one of the state's largest wetlands. Taro lo'i functioned as the kidneys of the wetlands and watershed. He quoted a study that suggested if you can only do one thing, return the normal instream flow. He commented on the environmental impacts associated with hydro power.

Tek Nickerson supported the testimony of Mr. Heacock. Public trust uses must come first. He asked why the pumps on the Mana Plain are not shown on the map. He questioned if chemicals are used to clear the ditches and banks.

Gilroy Yorkman outlined his solution to the problem. The mauka water does not need to be transported to the Mana Plain. The Mana Plain is a swamp. He questioned why water is brought down and then pumped out. He noted the existence of spring water and suggested it be used to irrigate the crops on the Mana Plain. He explained how water was used by Hawaiians and returned to the stream. He advocated for similar practices.

Commissioner Beamer thanked uncle for testifying.

Hope Kallai addressed safety concerns at Pu'u Lua Reservoir and the lack of a spillway. It does not make sense to divert water and then dump it at Kauhao Sluice. If it could be put into Pu'u Moe Divide it would not be wasted. She reminded the

commissioners about the Precautionary Principle and the public trust. There needs to be an infrastructure safety plan to address wildfires and other safety concerns.

Makaala Kaaumoana (Executive Director, Hanalei Watershed Hui) thanked the commissioners and staff for coming to Kauai. It is her job to implement the watershed action plan. Ms. Kaaumoana elaborated on her affiliations as the Vice-Chair of Hui Ho‘omalu I Ka ‘Aina (a traditional knowledge advocacy organization) and part of the Joint Pacific Coast Partnership. She told them her own experience with disaster resilience planning and touted the benefits of compliant reservoirs and the need for water storage. It is our kuleana to protect and defend the mouth of the river and estuary. She hopes the Commission will return annually to Kauai.

Klayton Kubo testified on the Kōke‘e diversions and the spillway at Pu‘u Lua Reservoir. The Kekaha Ditch gets more water than the Waimea River. He said on many occasions he has opened the river mouth by himself because there is not enough flow to push the sediment out. He reminded the Commission that they have an obligation to provide water for native species and Native Hawaiians.

3. Briefing by the Kaua‘i Island Utility Cooperative (KIUC) on the proposed pump storage project

Jason Hines (Joule Group), Dawn Huff (Joule Group) and David Bissell (CEO, KIUC) gave a presentation on the proposed pump storage project for the west end of Kauai.

Commissioner Antolini asked if the hydro plants are represented in KIUC’s current total.

Mr. Bissell said the energy from hydro power is about 10%. He gave an overview of Kauai’s energy outlook for 2023. Shortly, 30% of Kauai’s daytime demand will be met by solar. Solar is cheap, but storage has become a problem. KIUC has looked at battery storage, but pump storage appears to be the best option. Pump storage moves water back and forth between two reservoirs and is a closed loop system. Five potential sites were identified on Kauai. Pu‘u Lua Reservoir and Pu‘u Opa‘e Reservoir appears to be the best options.

Mr. Hines provided background on the conceptual design and survey work. The pump storage project will allow KIUC to implement more solar, by moving daytime energy into the evening when it is needed the most. The project will be 25 megawatts. Pump storage will also increase system reliability. KIUC is interested in using existing infrastructure or infrastructure in need of repair. Sufficient quantities of water for irrigation will be stored in the reservoir at all times.

Commissioner Beamer asked about evapotranspiration.

Mr. Hines said the reservoirs would be open and susceptible to evapotranspiration, but the pipeline would be closed. He showed a map of the potential project sites and described the elevation.

Commissioner Beamer asked if DHHL has been involved in the project.

Mr. Hines replied KIUC has been working with DHHL, ADC, and DLNR.

Chair Case asked about the location of the solar.

Mr. Hines said the solar is island-wide and attached to the grid and transmission lines. The project is intended to serve the entire island. The project would choose either Pu'u Lua or Pu'u Opae as the project site. The project would upgrade the reservoirs and bring them into compliance. Road improvements could also provide better hunting access and recreational fishing.

The commissioners asked specific questions about the technical aspects of the project including pressure levels.

Mr. Hines said pump storage is the most economical form of energy storage and can help decrease electricity rates. Once paid off, it is inexpensive to run. KIUC has held stakeholder meetings and met with community members.

Mr. Bissell announced the meeting in May in Waimea. KIUC's current rate is 32 cents/kilowatt hour.

Commissioner Buck asked about KIUC's meetings with KAA.

Mr. Hines said the project has the potential to fit into future irrigation plans. The stakeholder meetings have been open and positive.

Chair Case noted the benefit of reservoir upgrades.

Commissioner Starr asked how KIUC would choose which site.

Mr. Hines said both sites are comparable. More detailed survey and engineering work is needed. KIUC would like to fit in with the different agency management plans.

Mr. Bissell added that decision-making is also based on user needs and the flow of water. Decisions on the petition could impact the scope of the pump storage project.

Mr. Hines noted the farm plan proposed for Pu'u Opae as part of the planning process.

Commissioner Buck asked how the Commission could help move the project forward.

Mr. Hines said the intent of the presentation was purely informational. KIUC is not looking for anything specific at this point. He asked Dawn Huff to elaborate on the permitting process.

Mr. Bissell said a future request may involve a lease for the water that is pumped back and forth.

Dawn Huff clarified the water lease review and decision would come from the Board of Land and Natural Resources (BLNR).

Chair Case asked if the reservoirs would require occasional recharge due to the evapotranspiration.

Mr. Bissell answered "yes."

Commissioner Buck noted the competing needs surrounding water for DHHL lands, reservoir/dam safety concerns, adequate water for agriculture on the Mana Plain, and generating electricity. He asked if all the competing needs could fit together.

Mr. Bissell replied "yes." KIUC is concerned with pump storage, but the project could also provide low-cost hydro. The future of the project will be guided by the Commission's decisions.

Commissioner Beamer asked if both reservoirs are on DHHL land.

Mr. Hines said only Pu'u Opa'e. Mana is ADC land. Pu'u Lua is DLNR.

Commissioner Beamer asked how agency co-management would work.

Mr. Hines agreed the energy and irrigation sides need to operate independently so neither is sacrificed. KIUC envisions an operating agreement.

Commissioner Beamer asked if KIUC is dependent on the Mauka and Waiawa hydro plants for energy generation.

Mr. Bissell said the system would not be significantly impacted, but any source of renewable energy regardless of how small is a benefit.

Commissioner Beamer asked if KIUC gets 10%.

Mr. Bissell said the amount depends on pumping and other factors. It fluctuates.

Commissioner Pavao asked if the pumps would run at night.

Mr. Hines said the pumps would operate in the evening and the remote location of the pump house should not cause much noise.

Commissioner Pavao asked if the project would require grid improvements.

Mr. Bissell said "yes." The sizing of the system at 25 megawatts is the "sweet spot" for grid investment. Capacity is linked to the improvements linked to the grid.

Commissioner Starr asked if KIUC had any interest in becoming a water purveyor.

Mr. Hines replied "absolutely not." He continued his presentation and showed pictures of the reservoirs and project area.

Commissioner Antolini asked KIUC to describe the transmission lines on the Mana Plain.

Mr. Hines said KIUC engineers have looked at upgrading existing lines. New lines would not be installed due to bird issues.

Commissioner Antolini noted the Commission's interest in the evapotranspiration issue. She said the project sounds interesting and could help with solutions.

Commissioner Starr asked about the timeline.

Ms. Huff said 2018, but realistically it will be 2019.

John Aana commented on the project. He reiterated the comments made by his cousin, Gilroy Yorkman, about the 26 capped springs. He suggested the spring water be pumped into the reservoirs. Then there would be no need to take water from Kōke'e.

Commissioner Beamer asked if the pump storage project could use brackish water.

Mr. Hines said there are projects that use seawater and reclaimed water. KIUC has not pursued those options because it wanted to integrate the project with the current irrigation system. The concept of bringing brackish water into fields could be problematic.

Mr. Aana noted the springs are not brackish.

Commissioner Antolini asked who knows the most about the springs.

Mr. Aana said Landis Ignacio.

Commissioner Antolini shared her interest in learning more about the springs on a future site visit.

Tim Kallai asked how the project would improve hunting access and recreational fishing.

Mr. Hines answered the project would improve access roads to various areas, including those used for hunting and fishing.

Commissioner Buck pointed out there would be more water in the reservoir for the trout.

Mr. Hines said the project does not want to damage the trout habitat.

Mr. Kallai asked if there would be a refrigeration process to keep the water cool for the fish.

Mr. Hines said there will be more volume and depth in the reservoir which should keep the water cool. The water in the pipeline will be buried. Oxygen in the water will be looked into.

A member of the public asked if the water would be taken from the top or bottom of the reservoir.

Mr. Hines said the intake would be different for the upper and lower reservoirs. The lower reservoir would be shallower. The water that travels up will likely be warmer, which is an issue that needs to be looked at.

Phoebe Eng mentioned her work with the Kekaha Hawaiian Homestead Association on their farm and irrigation plan. She spoke highly of Mr. Hines and Ms. Huff as excellent resources. The plan has been submitted to DHHL for review. She said the Kekaha Hawaiian Homestead Association supports the project and the Commission's kuleana to uphold DHHL reservation rights.

Kipukai Kualii talked about the West Kauai Homestead Association. He said there is plenty of land in West Kauai for homesteaders and DHHL rights are part of the public trust. He said he would follow-up with a letter and thanked the commissioners.

Sherri Cummings said the KIUC solar project in Anahola has been incredible. She spoke highly of KIUC's engagement with the community.

Jan TenBruggencate (KIUC, Board Chair) noted that KIUC is a publically owned cooperative with an elected board. The KIUC board supports the project.

Commissioner Buck proposed that the Commission lay out its plan for the next meeting. He asked the Deputy AG if two commissioners can draft an action item to be considered at the next meeting.

Deputy AG Lau said it is a permitted interaction.

Commissioner Buck volunteered to work with Commissioner Antolini to draft some guiding principles and priorities regarding Kōke'e, Kekaha and the petition.

Deputy AG Lau clarified that an action taken by the Commission should involve three steps 1) appoint the two members 2) report back and 3) take action.

Commissioner Antolini said the commissioners can think about the process and talk to staff as long as the commissioners do not "daisy chain."

Commissioner Buck said the Commission should reiterate what its core public trust priorities are and what was heard during the site visits and meetings so the community has a better sense of the direction we are moving.

Commissioner Pavao asked if the minutes would suffice.

Commissioner Beamer agreed the May agenda should have an action item to address next steps for the Kauai petition.

Commissioner Buck agreed.

Commissioner Antolini asked if the meeting should be held on Kauai.

Deputy AG Lau said a public hearing needs a proceeding.

Commissioner Starr asked if the petition would trigger a hearing for action.

Deputy AG Lau said the Commission needs to have a sunshine meeting that notices an action on the petition, prior to going into a public hearing under Chapter 91. The parties would need to attend in order to present their evidence. Usually a hearing officer is appointed to the hearing.

Commissioner Starr said it is not a contested case. He asked why it cannot be handled under Chapter 92.

Deputy AG Lau said the Commission would have to identify which method it intends to use to resolve the dispute. The method could be mediation.

Chair Case said the Commission is not ready for formal proceedings and needs more time to absorb the information and think about the issues.

Commissioner Pavao asked if the parties could reach a mutual agreement on their own.

Commissioner Antolini said staff and the parties should continue to talk. However, the Commission can also provide some guidance to push it along.

Commissioner Buck said it is intended to provide a framework and direction. No decisions will be made. It does not need to be formal.

Commissioner Antolini said any commissioner can draft suggestions. She asked if the community would be ok if the item was discussed on Oahu instead of Kauai.

Commissioner Starr felt the Commission should provide some guidance and have a discussion by the May meeting. He said he takes the "waste" issue very seriously. Perhaps the Commission could have a meeting in June on Kauai.

Rebecca Alakai (Planner, Stream Protection and Management) said staff has met with the parties numerous times. There has been good discussion. The staff letter to KAA includes the data requests and is waiting for review.

Commissioner Antolini said there may be other questions to add.

Chair Case instructed staff to send the letter and work with the other commissioners to get their input.

Deputy AG Lau asked about the purpose of the discussion group.

Commissioner Antolini said it will lay out a framework for discussion.

Deputy AG Lau said Mr. Spengler may also have information to share.

Commissioner Buck stressed that the letter would not be a decision, but rather provides general guidance and assurance to the community.

Commissioner Antolini said it could be called an "inclination" rather than a "letter." She asked if the agenda would notice it as an action item.

Commissioner Beamer apologized for having to leave the meeting. He thanked the community for sharing their thoughts and believes there are steps the Commission can take.

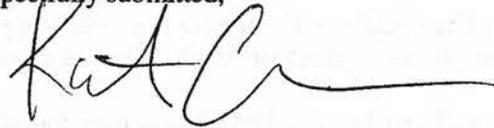
Commissioner Starr said the decision about the letter could be left to the Chair and staff.

Chair Case requested that Commissioners Buck and Antolini start the conversation.

The commissioners thanked everyone in the audience for staying all day to participate.

Chair Case adjourned the meeting at 6:16 pm.

Respectfully submitted,



KATIE ERSBAK
Private Secretary to the Deputy

APPROVED AS SUBMITTED:



W. ROY HARDY
Acting Deputy Director