

Kaua'i Water Use & Development Plan Update
Second Series of Public Meetings
August 31, 2023
Kīlauea Neighborhood Center
5 PM to 7:00 PM

ATTENDANCE:

KDOW: Joseph Tait (Manager and Chief Engineer), Michael Hinazumi (Deputy Manager), Jason Kagimoto (Engineering Division Head), Regina Flores (Engineering Division, Water Resources & Planning, WRP Section Head), Erin Doi, Margie Mills (Engineering Division, WRP Section), Scott Suga (Engineering Division, Project Management Section), Jonell Kaohelaui'i (Public Relations, PR)

Fukunaga & Associates, Inc. (Consultant): Amanda Waki, Amanda Miyahara
Planning: Leanora Kai'aokamalie

PURPOSE:

The purpose of this series of five (5) public meetings is to present the draft Kaua'i Water Use and Development Plan (KWUDP) Update and its findings.

The intent of this series of meetings is to create an understanding of the purpose and intent of the KWUDP Update and the context in which it is being developed. The public meetings give the community an opportunity to provide feedback and express any concerns that they may have on the KWUDP Update.

The meeting started with an introduction by Jason Kagimoto and was followed by a presentation by Fukunaga & Associates. The draft KWUDP Update is posted on KauaiWater.org/KWUDP.asp.

DISCUSSION:

These notes reflect the questions and concerns voiced by attendees at the Kīlauea meeting. (Q = question; A = answer; C = comment.)

- 1) Q: Are you sure all of the water in Kalihiwai comes from Princeville?
A: The Princeville Water System is a privately-owned public water system in the Kalihiwai aquifer system area (ASYA) and is supplied by two wells. There are also two KDOW water systems that serve portions of the Kalihiwai ASYA: the 'Anini Water System and the Kīlauea Water System. The KDOW 'Anini Water System receives water purchased from the Princeville Water System. The KDOW Kīlauea Water System serves areas in the Kalihiwai ASYA and Kīlauea ASYA. [The KDOW Kīlauea Water System spans from the Waipakē Subdivision in east Kīlauea to the Kalihiwai River.] The KDOW Kīlauea Water

System is supplied by two wells in the Kīlauea ASYA. [See Figure 20201-5 for the service areas of the water systems.]

2) Q: Land planning is determined by who? Is it like Kōloa where it's determined by project development?

A: Land use planning is done by the COK Planning Department.

3) Q: How do you determine sustainable yield (SY)? How can you tell whether aquifers are drying up?

A: CWRM establishes the sustainable yield (SY) estimates, which is evaluated by using analytical ground water models (Robust Analytical Model, please see Appendix F of the 2019 WRPP for a detailed discussion). CWRM applied the precautionary principle in selecting the SY for the 2019 WRPP Update, and in general, selected the most conservative SY for each ASYA as the SY. CWRM does not have any monitor wells on Kaua'i. Groundwater conditions can be monitored by the level of chlorides (salinity) in production wells.

4) Q: Is the SY from 1990?

A: No, the original WRPP was published in 1990 but has since been updated twice. The latest update was in 2019 and the 2019 WRPP is where the SY numbers are from.

5) Q: Can you go over the Hanalei/Princeville/Kilauea population projections?

A: The population projections are from the Planning Department and were published in the 2018 General Plan.

6) Q: I saw another plan that included an analysis based on unit counts and land area (e.g., can build 5 houses on 1,000 acres of land). What did the KWUDP Update do?

A: The demand analysis was performed two ways. The first evaluated the existing demand and projected future demand based on the population projections. The second evaluated the General Plan and zoning full-build out (FBO), which multiplied land areas by appropriate water use rates and allowable development densities. It is noted that the analysis is a conservative preliminary analysis and does not evaluate water demand at a more precise/detailed level (property/parcels), which would decrease the FBO water demand projection. More information on the FBO analysis can be found in Section 2.2.2 of the KWUDP Update.

7) Q: What's a dwelling unit?

A: A dwelling unit is essentially the equivalent of a home. [A dwelling unit is defined as "any building or any portion thereof which is designed or intended for occupancy by one (1) family or persons living together or by a person living alone and providing complete living facilities, within the unit for sleeping, recreation, eating and sanitary facilities, including installed equipment for only one (1) kitchen. Any building or portion thereof

that contains more than one (1) kitchen shall constitute as many dwelling units as there are kitchens” per the Title IV Chapter 8 of the Kaua’i County Code.]

- 8) Q: If we barely have enough water to support ourselves now, how can we expect to support up to the FBO scenario? Were schools, shopping centers, and new housing development considered?
- A: The FBO scenario analyzed the maximum water needs if all land is developed to its theoretical highest extent allowed by current land use plans and policies (General Plan and zoning), including areas of land designated or zoned as residential, resort, etc. The FBO analysis assumes that every square foot is developed to the maximum extent and does not account for area needed for roads, buffer areas, or undevelopable topography. Therefore, the FBO scenario is extremely conservative as its main purpose was to determine if the existing land use plans and policies are sustainable. If the schools, shopping centers, and new housing development were included in the General Plan/zoning, then it was considered as part of the FBO scenario analysis. Source development and infrastructure improvements are separate from the FBO land use comparison to SY.
- 9) Q: The sustainability of land use policies (FBO scenario) vs. projected demand seems misleadingly low.
- A: The FBO water demands are conservatively high, which may contribute to the projected demands seeming low.
- 10) Q: The KWUDP Update seems very esoteric. How does this plan affect projects 20 years from now and what feedback do you need to adjust it? This study doesn’t address our “we don’t have water” mentality.
- A: The primary objective of the KWUDP Update is to analyze Kaua’i’s land use plans and policies (General Plan and zoning) to see if the land use plans and policies are sustainable (i.e. FBO < SY), which is the case for all ASYAs on Kaua’i. KDOW is also working on the Water Systems Investment Plan (WSIP), which is a separate planning project. That project will evaluate KDOW’s water systems and recommend projects for infrastructure improvements, expansion, etc.
- 11) Q: How can Kīlauea and Kalihiwai survive when only 5% of the water needs can be sustained? [This is in reference to the Irrigation of Agricultural Lands table for the Kīlauea ASYA shown in the presentation.]
- A: There is limited available information on agricultural water use and surface water. For the purpose of providing a general comparison of agriculture demand to surface water, it was assumed that no additional surface water diversions are allowed without amendment of the interim instream flow standards (IIFS), and declared surface water diversions were used to represent surface water supply. These declared diversion quantities are published in the WRPP, and most of the quantities have not yet been

verified by CWRM. The table showed that only 5% of agricultural lands that scored ≥ 28 in the County of Kaua'i's Important Agricultural Lands (IAL) Study can be irrigated at a rate of 3,400 gallons per acre per day, which is the diversified water use rate that was estimated in the 2004 AWUDP (i.e., this analysis is for agricultural lands only) using only the declared surface water diversions.

- 12) Q: How much water is available in the aquifers based on how much water is being withdrawn to serve existing demand? People can't develop here because there's not enough water.
- A: The sustainable yield (SY) is the maximum rate at which water may be withdrawn from a water source without impairing the utility or quality of the water source. However, it is noted that SY does not consider the feasibility of developing the groundwater and should not be equated to developable groundwater. Due to Kaua'i's age, it has complex hydrogeology, and the SY is not directly related to the productivity of the groundwater wells. Several models have been developed to estimate the sustainable yield, which have been analyzed by CWRM to assist with selecting the sustainable yield. The models are explained in more detail in Appendix F of the 2019 WRPP.
- 13) Q: I've talked to CWRM recently about my well. Within 1 mile of my well, there's 60 other domestic water wells. Of those 60 wells, only 12 report their pumpage to CWRM. There's no penalty to the well owners who don't report. You're basing your analysis off their lack of knowledge.
- A: The CWRM well database provides the best available information on wells and was used to evaluate existing ground water resources. Well pumpage reporting is relatively high with the large users; however, your concern will be passed along to CWRM.
- 14) Q: What is the long-term plan to provide agricultural water to properties when reservoirs are planned to be decommissioned?
- A: This question will be sent to CWRM and the Department of Agriculture (DOA). It is noted that several of the irrigation systems in this area are inactive and DOA does not recommend repair per the draft 2019 of the Agricultural Water Use and Development Plan (AWUDP). More information on the existing status of the irrigation systems can be found in the 2004 AWUDP (available [here](#)) and the 2019 AWUDP (public review draft, available [here](#)).
- 15) Q: What is being done to preserve surface assets like Kalihiwai Reservoir?
- A: [DOA is responsible to prepare the AWUDP, which inventories the larger irrigation systems and assesses their rehabilitation potential and needs. KDOW does not own or manage reservoirs and surface water irrigation systems.]
- 16) Q: By what criteria is a well, storage tank, or reservoir decommissioned? Does CWRM consider these storage/source taps comprehensively with regards to future land use?

A: [The decommissioning of a well, storage tank, or reservoir is not taken lightly, and the decision is made by the owner. There are costs associated with operating, maintaining, and repairing these elements, and the costs and risks need to be considered by the owner against the benefits. CWRM does not have input on the decommissioning of these elements as they are not the owner.]

17) Q: How can we utilize non-potable water for fire flow protection?

A: Reservoirs have the ability to store water that could be made available for fire flow purposes. The use of reservoirs for fire protection is typically coordinated between the Fire Department, the reservoir owner, and the DLNR's Division of Forestry and Wildlife (DOFAW).

18) Q: Water is an asset to use for human/wildlife sustenance; however, as we know from Hurricane Iniki, it can also cause destruction. What plans do you have to address disasters and public safety from water misuse?

A: [Agreed; potable water should be used for the most valuable end use, which is human consumption and domestic use.

19) Q: My understanding is that the KWUDP Update should include fire flow protection; it's lacking along our long-haul roads, especially in Hanalei. Where is money being allocated for infrastructure?

A: The primary objective of the KWUDP Update is to set forth the allocation of water to land use to guide the county in its planning, management, and development of land use and water resource strategies and policies for sustainable development. KDOW is concurrently working on the Water Systems Investment Plan (WSIP), which is the long-range plan and one of the items in the scope of work is to update the GIS of the KDOW water systems. Another item in the scope of work is to build the hydraulic model of KDOW's water systems, which will include analyzing the system under emergency situations (fire flow). This information will be used when developing the 20-year capital improvement program (CIP) project list. Public meetings for the WSIP will be held in 2024.

20) Q: Does existing development or affordable housing take priority over new development? There's land that still needs water. In the past, the land developer was responsible to install the infrastructure necessary to supply his development.

A: The water system is evaluated as part of the WSIP. However, the current goal for KDOW is to update the existing water system and to lift water meter restrictions and/or provide fire flow protection. Once that is addressed, then water system expansion can be considered. KDOW is doing their best to support the Mayor's Office in affordable housing.

21) Q: What is the timeline on expanding the water system? What projects is KDOW working on in Kīlauea? There's been talk to drill and develop a new well in Kīlauea for at least 10 years. Whenever we ask KDOW about it, we've been told it'll be another 3-5 years. What is the status of the well?

A: At KDOW, there are currently 30 CIP projects ongoing and 5 projects are in construction across the island. It is anticipated that an additional 3 projects will be in construction in the next year. In Kīlauea, there is a project to replace an existing storage tank with a larger tank. After the tank is constructed, there are plans to drill and develop a well at that tank site. In addition, KDOW is working on acquiring land for a new well in the Kīlauea area and a right-of-entry (ROE) access has already been secured. The public is encouraged to attend the WSIP public meetings next year as well to provide input on the new 20-year CIP projects and their prioritization. KDOW is also considering pursuing federal funding to help pay for projects that are identified in the WSIP.

22) Q: Will the additional capacity at the Puu Pane tank result in more water availability for housing projects 5-10 years from now? There's a water restriction in Kīlauea.

A: The additional capacity will help address storage limitations. Additional source(s) (well(s)) will also be needed. When KDOW develops a well, they are required to report the pumpage to CWRM. Part of the pump installation permit (administered by CWRM) is how much KDOW is permitted to pump from the well without negatively affecting the water source or the well. All wells have a certain capacity. Even if multiple storage tanks are built, there is still only a certain amount of water that can be pumped based on the number of wells in the vicinity. After upgrading the tank, a new groundwater source can be evaluated and possibly developed to fill the tank and supply more water to customers in the future. An environmental assessment (EA) will need to be completed, and KDOW would appreciate the community's support.

23) Q: KDOW does not provide water to properties on Ko'olau Road, between Waipake and Aliomanu. We were told that KDOW would not be able to provide water service for at least 20 years and we had to sign a form acknowledging this. Will we get water soon?

A: Unfortunately, KDOW's current priority is addressing their current water system (infrastructure improvements). Water system expansion is a long-range plan.

24) C: The Kīlauea community would like to help. If KDOW needs any assistance with securing ROE access or with the EA process, the Kīlauea community can help.

25) Q: As principal of the Namanahana School, I would like to know how we can add bathrooms, etc. to our school.

A: KDOW understands that Phase 1 of the project will provide portable restrooms and portable potable water but acknowledges that a permanent, stable supply of water is needed.

- 26) Q: Rainwater is a valuable resource, but Kaua'i doesn't allow water catchment. Is that something that will be changing? Is this a Department of Health (DOH) restriction or a KDOW restriction? Can rainwater catchment be used for agricultural purposes?
- A: KDOW currently doesn't allow rainwater catchment to be used as a potable water source in areas that are served by the KDOW water system due to concerns with cross-contamination. There are areas that are not served by the KDOW water system that have rainwater catchment. Rainwater catchment may be used for agricultural purposes as this is a non-potable water demand.
- 27) Q: Why is KDOW having problems/delays in approving water permits? Specifically, a permit application for a farm commercial kitchen, which was approved by other COK departments more than 6 months ago? Why don't you provide a liaison in your department who can follow through with an applicant? Do we not have enough water or is there not enough staff at KDOW to process the permit?
- A: For every permit, KDOW needs to assess source, storage and transmission requirements. Currently, there are source and storage limitations in the Kīlauea area, but the Puu Pane Tank upgrade will help alleviate the storage limitation.
- 28) Q: Are there programs to teach kids in school to conserve water? What efforts are planned to educate the public on conserving water use? For example, it's recommended to wash hair every few days (not every day) or to reuse kitchen sink water, which is great for plants.
- A: [Every year, KDOW coordinates an island-wide water education festival for 5th grade students called Make a Splash with Project WET (Water Education for Teachers). This festival brings together parents, students, teachers, government resource agencies and enthusiasts of all kinds for a common goal: to educate and promote awareness of water resources in a fun and interactive environment.]
- 29) Q: A 2-inch lateral from Kūhiō Highway broke and was replaced with a 1 ½-inch lateral. Six homes are served from this lateral and there is not enough pressure. When we asked KDOW why the 2-inch lateral was replaced with a 1 ½-inch lateral, we were told this is standard practice and a 2-inch lateral is an additional cost. Why?
- A: [Please contact DOW Engineering Division with the specific location of the lateral break/replacement for review and response].
- 30) C: There's a high concentration of wells in Moloa'a and an increasing need for surface water. I'm also concerned about aquifer recharge.
- 31) C: There's two separate water systems in the Kalihiwai Ridge area – one is KDOW and one is agricultural. The cost of the water from the agricultural water system is the same as the cost from the KDOW water system. Due to this, no one uses water from the

agricultural water system. What's the point of installing the agricultural water system if it's not feasible to the farmers?

A: It may be more appropriate to ask this question to the owner of the agricultural water system.

NEXT STEPS:

FAINC will brief the Commission on Water Resource Management (CWRM) and revise the KWUDP Update based on comments received from these public meetings and the CWRM briefing. The Pre-Final KWUDP Update will then be presented to the Kaua'i Board of Water Supply, then to CWRM for adoption. It is noted that the CWRM adoption process also includes public hearings.