

MINUTES
FOR THE MEETING OF THE
COMMISSION ON WATER RESOURCE MANAGEMENT

DATE: November 16, 2011
TIME: 9:00 am
PLACE: DLNR Board Room
Kalanimoku Bldg.

Chairperson William Aila, Jr. called the meeting of the Commission on Water Resource Management to order at 9:04 a.m.

The following were in attendance:

MEMBERS: Mr. William Aila, Jr., Dr. Lawrence Miike, Mr. William Balfour, Jr., Ms. Loretta Fuddy, Mr. Sumner Erdman and Mr. Neal Fujiwara

ABSENT: None

STAFF: William M. Tam, Robert Chong, Neal Fujii, W. Roy Hardy, Ryan Imata and Dean Uyeno

COUNSEL: Cindy Young, Esq.

OTHERS: Sheldon Char, Tom Nance, Paula Cutillo, Peter Fahauy, Jonathan Scheuer, Robert Akinaka, Ken Kawahara, Bruce Tsuchida (Townscape), Sherri Hiraoka (Townscape), George Kuo, Michael Sabata, Deborah Solis, Randolph Hara, Barry Usagawa (Honolulu Board of Water Supply, HBWS), George Kuo (HBWS), Ross Kaneko, Brian Skeens (CH2MHILL), Peter Young, Yvonne Izu, Rick Volner (Hawaiian Commercial & Sugar, HC&S), Garret Hew (HC&S)

A. APPROVAL OF MINUTES

September 27, 2011

MOTION: (Erdman/Fujiwara)
To approve the minutes.
UNANIMOUSLY APPROVED.

B. ANNOUNCEMENTS

Deputy Director William Tam announced the hiring of a new Executive Assistant, Katie Ersbak, to the Commission on Water Resource Management.

C. GROUND WATER REGULATION

- 1. Kalaeloa Solar One, APPLICATION FOR A WATER USE PERMIT, KS1 (Well No. 1905-11), TMK 9-1-013:028, WUP No. 908, Future (Industrial) Use for 0.300 mgd, Kapolei Ground Water Management Area, Oahu**

SUBMITTAL PRESENTATION by: Ryan Imata

Ryan Imata from the Commission on Water Resource Management introduced Item C1 as an application for a water use permit and informed the Commission that the applicant is requesting approval for an allocation of 0.300 million gallons per day (mgd) of non-potable cap rock groundwater from a proposed well to supply water for a solar power plant.

Mr. Imata briefed the Commission on several issues, including:

(1) Water availability

Ewa cap rock is regulated by a chloride cap of 1,000 mg/l instead of the typical sustainable yield quantity. Reported chlorides between January 2010 and August 2011 were between 325 and 520 mg/l, which are below the cap. A couple wells, including the Board of Water Supply's Kapolei Irrigation Wells, have not been used since 2009 and it appears that water is available to accommodate the proposed use.

(2) Reasonable-beneficial

The proposed use is Industrial and the 0.300 mgd of makeup cooling water requested by the applicant appears to be reasonable and justified when compared with previously approved Water Use Permits between 3.168 mgd and 14.4 mgd. The applicant states that the use is efficient and they have not found any suitable or practical alternatives.

(3) Interference with other existing legal uses

There are two other wells in the area, one of which is adjacent to a Groundwater Management Area, and the other which appears to be a monitor well. Pump test data will show any chloride increases and identify any potential adverse effects, but none are anticipated to be found.

(4) Public interest

(5) State and county general plans and land use designations

(6) County land use plans and policies

(7) Interference with Hawaiian home lands rights

As far as other criteria, items for 4, 5, 6 and 7 appear to be met.

(8) Other issues

As a power generating facility the proposed use does trigger an Environmental Assessment (EA), but one was prepared and the Department of Hawaiian Home Lands (DHHL) has issued a Finding of No Significant Impact (FONSI).

RECOMMENDATION:

That the Commission:

1. Approve the issuance of Water Use Permit No. 908 to Kalaeloa Solar One for 0.300 million gallons per day (mgd) of brackish water for industrial use, subject to the standard permit conditions and the special conditions listed on Page 5 of the Staff Submittal.

(OPEN TO QUESTIONS)

Commissioner Miike asked where the water goes after it is used.

Ryan Imata said that he did not know if there was disposal on-site, but he knows that there are system losses and said the applicant will be available to answer any related questions.

Tom Nance stated that this area has two identifiable aquifers – an upper aquifer that is used for supply and a lower aquifer that is used for disposal. Mr. Nance expects that the proposed project would utilize the aquifers in a similar manner and that the already issued DOH permit would allow disposal in the second aquifer.

Commissioner Erdman asked if the cooling process would cause steam evaporation.

Mr. Nance responded that there is a certain amount of loss, which is why the 300,000 gallons is a makeup supply of recycled water.

Commissioner Erdman commented on the 300,000 gallons that would need to be used remarking that it sounded like a significant amount of water.

Mr. Nance responded to Commissioner Erdman's comment by stating the 300,000 gallons is a lot less than what you will find at other power plants.

Chairperson Aila Jr. asked if there were any members of the public who wished to testify on this matter.

Barry Usagawa from the Honolulu Board of Water Supply (HBWS) commented that Kalaeloa Solar One agrees with the special conditions and the submission of a contingency plan and alternative water source (i.e. recycled water) in the event that the chlorides for the well exceed 1,000 mg/l. Mr. Usagawa pointed out on Page 3 under *Analysis of Practical Alternatives (2)* the treatment of wastewater reuse water is reserved for irrigation use, that the recycled (R-1) water, which is used for irrigation is not solely restricted or reserved for irrigation. He went on to comment that there is a pipeline surrounding the property that runs along the drainage ditch in proximity of the parcel, which could also be used in a contingency plan as an alternative water source that is considered recycled water.

Commissioner Erdman asked if HBWS has worked with other plants that use up to 14 million gallons of water per day for cooling, to recollect the steam and get water.

Mr. Usagawa responded to Commissioner Erdman's question by stating that HBWS provides "de-mineralized" (reverse osmosis water) for boiler feed for the power plants and the refineries. He described the practice as taking the water, boiling it, making the steam and using the steam to generate a turbine that helps with the refining process. The steam is then cooled through cooling towers, most of which are seawater cooling towers. HBWS has talked to H-POWER about using the R-1 water for the ashcan instead of potable water to keep the ashcan from moving. HBWS discussed the possibility of AES because they have a pile of coal that they wet down with potable water. He then stated that the pipeline was originally supposed to be use by Chevron, but the R-1 water quality had some limitations which is why the pipeline is now empty. Mr. Usagawa remarked that while 0.300 mgd is doable, some of the bigger cooling towers are very huge and could require more than 0.300 mgd.

Commissioner Erdman asked if Hawaiian Electric Co. had recently switched to R-1 water.

Mr. Usagawa stated that Kahe and the Campbell Plant use Reverse Osmosis (RO) water for power generation and R-1 water is principally used for irrigation, although it is not only reserved for that specific purpose.

Commissioner Fujiwara asked if the wastewater reuse was currently available and if it could be supplied to the applicant.

Mr. Usagawa responded that non-potable water is intended to preserve potable (brackish vs. recycled). R-1 water has a capacity of 10 million gallons per day, of which 7 million gallons is currently being produced. RO is producing about 1.4 million gallons per day.

Commissioner Fujiwara asked about the statement regarding water reuse and questioned whether or not the decision to use the aquifer rather than R-1 water was an issue of cost.

Mr. Usagawa responded that yes, it probably is.

Commissioner Balfour remarked that with the abandonment of Haseko's Ewa Marina, the cap rock in the marina area should have plenty of water and the use of brackish water is a step forward.

**MOTION: (Erdman/Miike)
To approve the submittal.
UNANIMOUSLY APPROVED.**

D. STREAM PROTECTION AND MANAGEMENT

- 1. Application for Stream Channel Alteration Permit (2907.3), State Department of Transportation, Highways Division, Stream Maintenance Activities, Ahuimanu Bridge and Stream and Halawa Stream, Declaratory Ruling No. DEC-ADM11-01, which amends DEC-ADM03-S9, Honolulu, Oahu, TMKs: (3) 4-7-003:006, 4-7-004:033 and 9-9-003:061**

SUBMITTAL PRESENTATION by: Robert Chong

Robert Chong from the Commission on Water Resource Management described Item D1 as having two components:

1) Stream Alteration Permit for the Department of Transportation

The permit for stream maintenance activities is related to the Ahuimanu Bridge and Stream and the Halawa Stream. The Commission did adopt a Declaratory Ruling for the Department of Transportation for stream maintenance activities. However these activities are beyond the scope of the Declaratory Ruling, which calls for less than 500 cubic yards and less than 2 weeks to complete. The stream maintenance activities in this case involve 14,000 and 8,000 cubic yards and would take approximately 3 months to complete.

Commissioners were informed that the TMK was incorrect and that the first number should be a (1) instead of a (3). CWRM Staff received comments from DLNR Division of Forestry and Wildlife on 11/15/11, which recommended that the Department of Transportation (DOT) conduct a visual and auditory inspection of the area to ensure that no nesting, native, or endangered water birds are present. CWRM staff asked that these comments be added as a special condition to the Stream Channel Alteration Permit (SCAP).

2) Amendment to the Declaratory Ruling

CWRM staff requested that this item be deferred to a later date because it was improperly noticed.

AMENDED RECOMMENDATION:

That the Commission:

1. Approve the application for Stream Channel Alteration Permit (2907.3) with the amended action to add a special condition to the Stream Channel Alteration Permit that requires the Department of Transportation to conduct a visual and auditory inspection of the area to ensure that no nesting, native, or endangered water birds are present.

(OPEN TO QUESTIONS)

Commissioner Erdman commented that perhaps the Department of Transportation could make the concrete look more attractive and accessible to native birds, but failed to see the reason for having the Department of Transportation conduct a visual survey since few birds are likely to nest within the concrete stream channel.

Chairperson Aila Jr. asked if anyone from DOT was present to address Commissioner Erdman's questions and if any members of the public wished to testify on this matter. No one in the audience wished to testify.

**MOTION: (Miike/Fuddy)
To approve the submittal as amended.
UNANIMOUSLY APPROVED.**

E. UPDATES AND BRIEFINGS**1. Briefing on Kona Ground Water**

STAFF PRESENTATION by: Roy Hardy

Roy Hardy from the Commission on Water Resource Management (CWRM) introduced the Kona Ground Water situation by stating that this area is considered a “hot spot” for hydrologic issues and is frequently cited by CWRM staff. Mr. Hardy went on to state that next month CWRM staff will present to the Commission the official adoption of Hawaii Water Use and Development Plan, which will cover some of the area’s future development plans and water demands.

3 general topic areas were outlined for discussion in the Kona Ground Water Briefing including 1) current conditions, 2) recent updates including the U.S. Geologic Survey (USGS) recharge update and Dr. Thomas Giambelluca’s updated Rainfall Atlas, and 3) future conditions and the status of monitoring.

1) Current conditions

Mr. Hardy reiterated that this information is available on the Water Commission website and began his PowerPoint presentation. He pointed out the Kona Region on a map, drawing particular attention to the Keauhou area as a primary “hotspot” with 99 wells. Mr. Hardy noted that Keauhou is not a management area.

The wells found in the Kona Region’s 3 aquifers (Kiholo, Keauhou, and Kealakekua) were displayed on a map, along with a dotted blue line, which was said to represent the boundary between the high and low (basal) water level wells. Mr. Hardy went on to clarify that the “blue” wells have higher water levels of approximately 100 feet, whereas “red” wells, or those that are found below or makai of the boundary line are only a few feet above sea level. This is significant because 20 years ago very few wells were drilled above the basal level.

This area has 20 major wells reporting to the Water Commission. However, the data is a little outdated (available up to 2010) due to the loss of the Survey Branch. There are roughly around 11.5 to 12 million gallons pumped per day on a 12 month moving average (pink line) with little variation due to domestic municipal uses. Mr. Hardy stated that the sustainable yield in this area (red line) is set at 38 million gallons per day, which puts water use at about 1/3. The Water Resource Protection Plan, which is part of the Hawaii Water Plan sets forth sustainable yield numbers, defined as:

“The maximum rate at which water can be withdrawn from a water source without impairing the utility or quality of a water source as determined by the Commission.”

It means that sustainable yield is set at the Commission’s discretion and can vary depending on the circumstances. There are also chloride and well infrastructure limitations, along with sustainable yield ranges, which were introduced in the last update to the Water Resource Protection Plan (2008). Mr. Hardy explained that

sustainable yield ranges are used to select the *minimum* sustainable yield in cases where the data is sparse. Another option is to move away from the minimum to higher sustainable yields where data monitoring and analysis justifies it.

According to Mr. Hardy, the aquifer recharge estimates identified in the updated 2008 Water Resource Protection Plan for the Big Island helped to establish the sustainable yield ranges. In the example of Hawi on the Big Island, the original sustainable yield was reduced from 18-29 million gallons per day down to 13 mgd, shown visually on the map as “blue” which represents a slight increase in recharge and “white” which equals little to no change, as in the case of Keauhou.

Importantly, sustainable yields are based upon a basic hydrologic model. Mr. Hardy went on to describe the basic hydrologic model and the use of RAM (Robust Analytical Model) in estimating the sustainable yield. Later he acknowledged that there are limitations to this type of modeling, however, it does provide good estimates. Thus, while it is difficult to define what the equilibrium head (or original head) in an aquifer had been at a time when there was no pumping, these numbers can serve as more of a global, “big picture” look. The main question to ask is “what’s your sustainable yield as a percentage of recharge?” Importantly, the minimum values selected for sustainable yield, are only a percentage of recharge and less than the percentage of recharge being lost to the ocean.

Mr. Hardy informed the Commission that observed high water level behavior in Kealakekua had decreased by 10%, due in part to a reduction in rainfall from climate change or perhaps VOG from the volcano. Water levels have actually been rising in Keauhou basal aquifer over the past 20 years. As opposed to the high water levels which have been dropping, the basal levels appear to be fairly steady. Mr. Hardy said that the effect on high-level water could also be localized, but overall it is not clear what may be causing the decrease in water levels.

2) Recent updates

According to Mr. Hardy, the updated USGS recharge numbers from August 2011 relate how much water is getting into the ground, including water from fog drip which had previously been unaccounted for. Referencing a map of the Big Island, Mr. Hardy showed the percentage change in the recharge numbers for every part of the island. The map showed a decrease in recharge along the northern tip of the Big Island, little to no variation in recharge along the Hilo side, and significant increases in recharge near Kalapana, along the southern tip, and up into Kona. Mr. Hardy believes that much of the increase in recharge can be attributed to the inclusion of fog drip from the USGS study. He said that using RAM, the new recharge numbers can revise the sustainable yield for each aquifer. For example, in Hawi, the sustainable yield range went down from 13-29 to 9-29 million gallons per day (mgd). However, in Keauhou the range went up from 38 mgd to possibly 67 mgd.

Mr. Hardy compared rainfall isohyets from the 1986 and 2011 Rainfall Atlases to show areas near Kona that have become drier between 1986 and 2011. This seems contrary to the USGS recharge study and could prompt another update.

3) Future conditions

According to Mr. Hardy, future monitoring plans include two monitor wells in Kona. He informed the Commission that during the monitoring process these wells unsuspectingly encountered fresh water beneath saltwater and under artesian pressure causing the water level in the well to rise above the basal water level, which could have an impact on the conceptual and numerical models currently being used by CWRM.

Mr. Hardy noted that there was a meeting held in August (2011) to look at moving away from minimum sustainable yield and gave the example of the Keauhou aquifer area. Mr. Hardy commented about current zoning for Agriculture and that certain areas are well above the current sustainable yield of 38 million gallons per day. Historic growth patterns as well as population are also included in the Hawaii Water Use and Development Plan Update, which was adopted by County ordinance, and a public hearing was held in August 2011 that included comments from the community and the National Park Service (NPS). Mr. Hardy said that the NPS is very concerned about the development and potential impacts to the national park. At the suggestion of CWRM, NPS convened a working group to encapsulate the concerns over the years. Public comments for the WUDP included a request from NPS that the DLNR Chairperson initiate designation in this area. CWRM however, does not feel that designation is warranted at this time.

Mr. Hardy ended his brief with a final recap of what had been discussed noting that the sustainable yield estimates appear to be conservative, the latest hydrologic data on recharge and rainfall estimates are not based on the best information available, and that there is a significant need to bump up the monitoring network effort with full staff if there is concern to move away from minimum sustainable yield. He stated that the Hawaii Water Use and Development Plan Update provides best estimates of future demands for the resource up to 2025 and will guide future decisions by the Commission as it relates to well construction permits and future designation of the area as a Groundwater Management Area.

(OPEN TO QUESTIONS)

Chairperson Aila Jr. asked how long it would take to get the new monitoring information after the hiring of new staff.

Mr. Hardy responded that CWRM can only move as fast as geologic time and monitoring would be month-to-month. However, he noted that managing online water use reporting by individuals, owners and users does have the potential to provide additional information.

Deputy Tam asked if Mr. Hardy could elaborate on the online water use reporting system currently being designed by the consultant, Oceanit.

Mr. Hardy responded that since the Survey Branch was lost, CWRM staff has had to manually transfer data from the water use reports. The new system currently being designed by Oceanit would allow users to report online directly into the database, thus eliminating the middle man.

The system would also help CWRM staff identify who is not reporting and give a more complete picture of what's going on.

Deputy Tam reiterated the importance of the new online system to help CWRM catch up with 2-3 years of backlog.

Commissioner Erdman asked if USGS was doing any research to look into the deepwater, freshwater issue.

Mr. Hardy said CWRM has been working with USGS and that they are aware of the issue.

Paula Cutillo, a hydrologist with the National Park Service, along with Peter Fahauy, an attorney with the Department of the Interior, and Jonathan Scheuer, spoke on behalf of Kaloko-Honokohau National Historical Park. Ms. Cutillo stated that the NPS has been working closely with CWRM staff, USGS and other stakeholders for over 10 years to better understand the potential impacts of groundwater development on water resources in the park. While the steps discussed by Mr. Hardy are encouraging, Ms. Cutillo made it clear that these efforts are not enough to protect the park and its important cultural and ecological resources that depend upon groundwater. Ms. Cutillo requested that the Commission and Hawaii County Department of Water Supply take additional actions to prevent impacts in the park and the impairment of resources due to groundwater pumping and development.

(OPEN TO QUESTIONS)

Commissioner Erdman asked Ms. Cutillo how much money the National Park Service is willing to give the Commission to help them with Commission monitoring efforts.

Ms. Cutillo said that NPS is currently spending over \$400,000 on a contract with USGS for a new model in this area.

Commissioner Erdman reiterated his question and asked Ms. Cutillo to explain how the Commission can get money to increase its efforts so it can afford to do the monitoring that NPS is asking for.

Ms. Cutillo said NPS is very open to contributing money for new monitoring wells and increasing monitoring in the area. She went on to state that monitoring alone will not protect the resources in the park and more action is needed including rethinking the placement of new wells in the area.

Commissioner Miike asked Ms. Cutillo to confirm for the Commission that the NPS is asking for designation of Kaloko-Honokohau National Historical Park as a Groundwater Management Area.

Ms. Cutillo responded yes.

Commissioner Miike went on to explain that designation is typically considered when pumping goes above 80% or 90% of the sustainable yield. As new well applications come in, the Commission can make recommendations as to the effect on the park, but that it was a little premature to start talking about designation as a Groundwater Management Area.

Ms. Cutillo asked to respond to those two items, stating that the Hawaii Water Use and Development Plan seriously under-estimates the projected water use in the area. She commented that the proposed water demands in the vicinity of the park are over 90% of the current sustainable yield and that the location of the wells is rarely considered unless the wells are located within a mile of the park. Ms. Cutillo said it is difficult to get developers to look at the cumulative impacts of pumping and that very few of their efforts have resulted in any additional protections for the park. She went on to state that the only real way to control the location of new wells and their pumping rates is through the designation of a management area. Revising or changing the sustainable yield alone will not protect the park.

Chairperson Aila Jr. asked about the specific resources that need protecting in the park.

Ms. Cutillo responded that there are important cultural and ecological resources that rely on groundwater including two fishponds, one that is important wetland habitat for endangered and migratory birds, and Kaloko fishpond that is being restored for active aquaculture. There are also alkaline pools that provide habitat for rare, endangered, and endemic species, as well as a coral reef ecosystem that is a nursery habitat for fish. Ms. Cutillo went on to state that there are several ongoing studies looking at the role that freshwater plays in sustaining these resources. Drought and climate change are other stressors that could affect these resources, which is why maintaining the current water can help achieve better resilience in the future.

Ms. Cutillo commented that these concerns are shared by others in the community, including the Office of Hawaiian Affairs (OHA) and the Association of Hawaiian Civic Clubs.

Peter Young commented on the sustainable yield estimates and encouraged the Commission and CWRM Staff to look at the recharge, the high elevation, and percentage used, to consider if the sustainable yield for the area should be amended from 44% up to 75%.

2. Briefing on Waialua

STAFF PRESENTATION by: Roy Hardy

The latest update to the Water Resource Protection Plan found an over-allocation in sustainable yield for the Waialua Aquifer System, which resulted in a reduction from 40% to 25%. The Department of Water Supply has asked for a permit, but since the mid-1990s there have been a lot of changes, which warrants further field investigations before bringing it before the Commission.

(OPEN TO QUESTIONS)

Commissioner Erdman asked if he could comment one last time on the Kona Groundwater Briefing and recommended that the multiple competing groups get together to see who can pay for future studies. Commissioner Erdman said he would feel better about making a decision on designation if there were less unknowns and he had more information.

Chairperson Aila Jr., asked for comments.

Deputy Tam told the Commission that the Kona Ground Water issue will likely become a major concern in the future, which is why it was brought before the Commission today.

3. Briefing on Reclaimed Water

STAFF PRESENTATION by: Deputy Director, William Tam

Deputy Tam requested that Item E3 be postponed for discussion at a later time.

4. Update on the Implementation of East Maui Interim Instream Flow Standards

STAFF PRESENTATION by: Dean Uyeno

Dean Uyeno from the Commission on Water Resource Management said he would touch on four main points and told the Commission that site visits to Maui had taken place in March, June, and September 2011. Mr. Uyeno said that CWRM has been working with Wailuku Water Company, East Maui Irrigation Co. (EMI), and HC&S to implement the biological connectivity issues for diversions in East Maui and Na Wai Eha and the companies have installed bypass channels across the diversion to allow for some flow so that aquatic organisms can move upstream above the diversions. He went on to state that EMI has used pipes to convey water from upper points on the stream to the diversion to provide a flow upstream and downstream for the aquatic organisms and that the Division of Aquatic Resources (DAR) has been involved in these efforts.

Mr. Uyeno said that in November 2011, EMI implemented their wet season releases which had previously been approved by the Commission in May 2010 and will continue for the next 6 months until the dry season.

Mr. Uyeno also pointed out the last page of the handout and the graph depicting the flows in the Spreckels Ditch intake on South Waiehu Stream.

With regards to future activities, Mr. Uyeno stated that CWRM will continue to work with USGS on rating curves for stream gage locations and Kisters to utilize the full suite of WISKI time-series data management software.

Chairperson Aila Jr. asked if there were any questions.

5. Briefing on the City and County of Honolulu's Water Use and Development Plan Update – Ko'olau Poko Watershed Management Plan

STAFF PRESENTATION by: Neal Fujii (Barry Usagawa and Bruce Tsuchida)

Neal Fujii from the Commission on Water Resource Management (CWRM) introduced Barry Usagawa from the Honolulu Board of Water Supply to discuss the Ko'olau Poko Watershed Management Plan.

Barry Usagawa thanked the Commissioners and introduced representatives from the Department of Planning and Permitting along with the consultant, Townscape.

Mr. Usagawa gave some background information on the project, the Oahu Water Management Plan (OWMP) framework and the status of the OWMP District Components. He went on to review the aquifer systems on Oahu which total 407 million gallons per day (mgd) not including the Waiahole Ditch. He stated that since 2009, $\frac{3}{4}$ of sustainable yield have been issued with approximately 113 mgd remaining. Mr. Usagawa continued by stating only the Honolulu aquifer is over-permitted by 3 mgd, but the total pumpage for 2009 is well below the sustainable yield of 41 mgd. Mr. Usagawa stated that there is available water on Oahu and that it is mostly concentrated in the rural areas. He pointed to a graph that showed the Board of Water Supply Demand Projections for potable water decreasing over the last 12 years.

Commissioner Erdman asked what sectors showed a decrease in water use.

Mr. Usagawa responded that urban areas like Honolulu have decreased by about 10 mgd as a result of low-flow toilet fixtures, conservation and education, whereas, up and coming areas like Ewa have increased their water use largely as a result of more growth and development.

Mr. Usagawa opened up about the Board of Water Supply's Alternative Resource Development Plans involving desalination of brackish and recycled sea water, explaining that the diversification and conservation of use will help preserve the natural resource. His presentation went on to state that the goal of the Ko'olau Poko Watershed Management Plan supports a triple-bottom line that balances social, economic, and environmental issues for present users and future generations. The two big pieces of the plan include 1) water use and development and 2) how to protect and manage what is there now while focusing on the Plan's five major objectives.

Mr. Usagawa then introduced Bruce Tsuchida from Townscape.

Bruce Tsuchida summarized the last 3 years of planning for the Ko'olau Poko Watershed Management Plan starting with some overview facts about the district which extends from Kualoa in the north down to Waimanalo in the south and consists of 12 ahupua'a, 19 stream watersheds, and 12 perennial streams.

He said that over the last couple of years the HBWS staff conducted a field inventory of stream flows and diversions in Ko'olau Poko. Over the course of the study, the HBWS identified 117 stream diversions, many of which were active. The total amount of flow diverted was estimated to be a little over 20 mgd, which is equivalent to $\frac{1}{3}$ of observed stream flows in those areas.

According to Mr. Tsuchida, there are two aquifers in Ko'olau Poko, with a sustainable yield of 30 mgd and 10 mgd. The permitted use for wells in these two areas is 15.3 mgd and 1.6 mgd respectively, with actual withdrawal amounts from 2005 in the range of 12.7 mgd and 0.5 mgd. He went on to state that in terms of both permitted use and actual withdrawals, there is quite a bit of reserve in these two Ko'olau Poko aquifers.

Next, Mr. Tsuchida discussed the importance of community-based planning for the Ko'olau Poko Watershed Management Plan and informed the Commission that over 70 stakeholder and community meetings had taken place. He said these meetings were intended to produce a better understanding of community values and communicate some of the critical issues and concerns of the stakeholders (e.g. food security, the importance of water resources, population growth, climate change, and water quality) in order to develop a plan, detailed objectives, strategies, planning projects and programs. Mr. Tsuchida explained that the Ko'olau Poko Watershed Management Plan flows from an understanding of values and issues and is rooted in the community.

Mr. Tsuchia reported on water use findings stating that urban water use in Ko'olau Poko is projected to slightly decrease over the next 20 years based on population projections from the Department of Planning and Permitting which show a gradual decline in Ko'olau Poko population over the next 20 years. He commented that a decrease in urban use might lead to a decrease in well pumpage, which could result in stream restoration and further conservation. Mr. Tsuchida noted that in the future there is potential to use some of the non-potable water for agriculture and pointed to an illustration of water supply options in terms of groundwater that could reduce the current 6-7 mgd of water currently being imported from neighboring Ko'olau Loa. Other supply options include conservation and surface water, noting that farmers should be encouraged to use existing diversions efficiently before considering new ones.

Mr. Tsuchida explained the graph depicting a summary of supply and demand for non-potable water and permitted uses for groundwater, surface, and recycled water, summarizing that the supply appears to be available to handle any increases.

The Ko'olau Poko Watershed Management Plan is available on the HBWS website and takes a holistic view of watershed management. The map on the screen depicted 37 watershed management projects scattered throughout the region, including public and community-based projects with a "champion," also known as a non-profit or public agency that is responsible for implementing that project. Mr. Tsuchida said the implementation chapter of the plan identifies critical watersheds within neighborhood boards and catalyst projects that have the potential to provide a wide-range of benefits to the community, one of which is the He'eia Watershed catalyst project entitled Māhuhua 'Ai o Hoi – "Regrowing the Fruit of Hoi," which seeks to restore up to 200 acres of kalo to the He'eia wetlands. The Plan contains implementation guidelines and alternative funding opportunities outside the Board of Water Supply.

Mr. Tsuchida finished his presentation by remarking on the status of the plan stating that the scope of work was approved by the Commission in 2008, a public review draft was released in November 2010, and recently presentations have been given to the four neighborhood boards and received endorsement from three of the four. Early next year the plan will move into the City Council approval process which requires three council meetings. The Board of Water Supply will also work with CWRM staff to schedule a public hearing and come back to the Commission sometime next year to formally request an approval.

(OPEN TO QUESTIONS)

Chairperson Aila Jr. asked if there were any questions for Mr. Tsuchida or the Board of Water Supply about this presentation.

Chairperson Aila, Jr. excused himself at 11:04 a.m. and designated Commissioner Miike to continue the meeting. Commissioner Loretta Fuddy excused herself as well.

6. Project Progress Update: Development of a Statewide Water Conservation Program

STAFF PRESENTATION by: Neal Fujii (Ross Kaneko and Brian Skeens)

Neal Fujii from the Commission on Water Resource Management informed the Commission that this is the first progress briefing on the Statewide Water Conservation Plan since CWRM entered into an agreement with the Army Corp of Engineers in June 2010 and the contract was awarded in September 2010. Mr. Fujii introduced Ross Kaneko from the CH2M HILL Honolulu Office to give an overview of the project.

Ross Kaneko outlined what would be discussed, including a status update, a summary of the project objectives, activities of the Water Conservation Advisory Group, best management practices, and a summary of next steps.

Mr. Kaneko noted that the overarching objective of the Statewide Water Conservation Plan is to develop a coordinated statewide strategy and policy framework, to develop a program to implement the strategy and framework, and to work collaboratively with stakeholders to achieve water conservation goals. Specifically the aim is to create a Statewide Water Conservation Plan that includes goals and objectives, and various components related to outreach, implementation and funding. Mr. Kaneko then asked Brian Skeens to summarize CH2M HILL's activities over the last year.

Mr. Skeens recognized the importance of input and feedback from county and public water systems, military, agriculture, landscape and commercial sectors. He talked about the mission of the Water Conservation Advisory Group to develop and guide study efforts throughout the process, provide subject matter input from their expertise and experience, assist with policy and program development, and review and comment on the goals of the plan. Mr. Skeen pointed to a list on the screen of active participants in the process. A graphic exhibiting Statewide Water Use attested to Agriculture's large share of water use in Hawaii and the municipal breakdown showed that residential use is a major component of municipal use, which will likely come up again in discussions about best management practices.

Mr. Skeen informed the Commission that the first meeting with the Water Conservation Advisory Group was held in May 2011 and provided assistance with data collection while helping to target conservation goal planning for the State. The second meeting was held in August 2011 and focused on agriculture, golf course, landscape irrigation and water use. Best management practice break-out groups helped generate ideas, comments and endorsement on specific practices for Hawaii, while identifying obstacles that could hinder the implementation of best management practices. Mr. Skeens informed the Commission that the third meeting of the Advisory Group is set to take place tomorrow,

November 17, 2011, and will focus on municipal and military water use sectors. Best practices will be discussed with the intent to build upon and identify previous work in the State and how best to implement goals, strategies and responsible parties.

Mr. Kaneko spoke briefly about next steps and told the Commission that the Advisory Group will meet again in March 2012 to present and discuss the proposed implementation steps and strategies. A fifth meeting will be held in June 2012 to share the draft plan and solicit input, and the sixth meeting will take place in September at which time CHM2 HILL will present the final plan. Mr. Kaneko said the final project should be completed and presented to the Commission by next November 2012.

(OPEN TO QUESTIONS)

Commissioner Erdman asked how much of the agriculture water was looked at as an instream use.

Neal Fujii responded by saying that most of it is surface water.

Commissioner Erdman asked if the project looked at greywater in rural areas and working with the Department of Health.

Mr. Skeens said that greywater is definitely something they will consider in their best management practices and that they plan to work with the Department of Health.

7. HC&S Update on Addressing Waiale Reservoir System Losses

STAFF PRESENTATION by: Dean Uyeno (Rick Volner, Garret Hew)

Dean Uyeno from the Commission on Water Resource Management introduced Rick Volner and Garret Hew from Hawaiian Commercial & Sugar Company (HC&S).

Commissioner Miike asked for a brief summary of the issues.

Rick Volner gave a broad overview of the Waiale Reservoir and explained that it is the sole surface water source for about 4,000 acres of sugarcane. He informed the Commission that the Waiale Reservoir (a.k.a. Reservoir 73) has a capacity of 70 million gallons with 20 acres of surface area and was commissioned in 1908.

Mr. Volner explained that because the open ditch that runs through Wailuku town has been utilized by Maui County as a storm water runoff system, it was important to understand the inflows and average daily water deliveries into the reservoir system in order to determine the best solution for seepage mitigation. Mitigation options include lining with concrete or high density polyethylene or bypassing the existing reservoir and constructing an open flume with a lined ditch.

Garret Hew talked about the interim instream flow standards (IIFS), monthly groundwater use reports and a summary of the compliance timeline.

Mr. Volner went on to state that HC&S will begin engaging with engineering and design consultants on the seepage mitigation issue sometime early next year and begin the permitting and approval process by mid 2012.

(OPEN TO QUESTIONS)

Commissioner Fujiwara commended the representatives from HC&S on their mitigation research. He went on to ask about bypassing the Waiale Reservoir and if that would require a holding system (i.e. smaller storage reservoirs).

Mr. Volner responded that there are two smaller reservoirs on the system and potential to automate the ditch control system to adjust and limit what can pass through the reservoir safely without overflowing into the reservoir.

Commissioner Erdman inquired as to the owner of the reservoir. He then inquired if A&B would need to maintain the reservoir for storm water retention purposes.

Mr. Volner stated that the land owner is A&B. He then noted that, while the county has increased storm water handling capacity in Wailuku Town, the system could still be able to accept storm water runoff for conveyance to HC&S and used for irrigation.

Commissioner Miike asked to confirm the regulation of Reservoir 73, which in turn kept the second overflow reservoir dry. He then asked how HC&S would maintain a stable source of water during dry streamflow periods.

Mr. Volner commented that the statement on regulating Reservoir 73 was correct. Regarding water stability, he stated that HC&S is trying to regulate inflows and outflows more accurately and that they are using Well No. 7 considerably more. Well No. 7 is pumped at about 11.8 mgd. For this year alone, pumpage has been about 3.6 billion gallons of ground water.

Commissioner Miike asked about the monitoring results for Well No. 7.

Mr. Volner said they have seen an increase in salinity and a drop in water level. Well No. 7 is still limited to 14 mgd due to the configuration. There were days early in the year when rainfall and surface water was sufficient that the well was not run, but since mid March the well has been run every day.

Commissioner Balfour commented that he does not understand the rationale behind lining reservoirs to save water because the seepage eventually goes back into the groundwater.

Commissioner Miike responded to Commissioner Balfour's comment by referencing the Waiahole Ditch contested case and that the Supreme Court said that leakage is loss and the argument that leakage recharges the groundwater cannot be made.

Commissioner Balfour reiterated that it is not good common sense.

Commissioner Miike asked for any final remarks.

Deputy Tam asked Mr. Volner to comment on the consequences of lining based on the salinity rates of the nearby wells.

Mr. Volner wasn't aware if that data was available but that both HC&S and A&B were reporting their well data.

F. ADMINISTRATIVE OTHER BUSINESS

Deputy Tam provided the Commissioners with a copy of the recently released Watershed Management Plan, "The Rain Follows the Forest: A Plan to Replenish Hawaii's Source of Water," which will be discussed at a future Commission Meeting.

Commissioner Balfour asked about the status of hiring.

Deputy Tam informed the Commission that CWRM had received the authority to fill eight positions and is in the process of receiving applications and conducting interviews.

F. NEXT COMMISSION MEETINGS (TENTATIVE)

1. December 21, 2011

Vice Chair Miike adjourned the meeting at 11:38 a.m.

Respectfully submitted,

KATIE ERSBAK

APPROVED AS SUBMITTED:

WILLIAM M. TAM
Deputy Director