**LANA`I PLANNING COMMISSION**
**REGULAR MEETING**
**AUGUST 20, 2008**

***Approved 10-15-08***

## A. CALL TO ORDER

The regular meeting of the Lana`i Planning Commission was called to order by Chair Sally Kaye at approximately 6:02 p.m., Wednesday, August 20, 2008, in the Lana`i High & Elementary School Cafeteria, Lana`i City, Hawaii.

Ms. Sally Kaye: Okay, I'm going to call the August 20th Lana`i Planning Commission meeting to order. Let the record show we have quorum with Commissioners Rabaino, de Jetley, Endrina, Castillo, Gamulo, Zigmond, Kaye and Ruidas. First on our list is approval of the minutes from July 16th. I sent around some corrections. I don't know if anyone has any others, but I need a first and a second.

## B. APPROVAL OF THE MINUTES OF JULY 16, 2008

Ms. Beverly Zigmond: I move that we approve the minutes of the July 16, 2008 meeting as amended.

Ms. Alberta de Jetley: I second the motion.

Ms. Kaye: Any discussion? Any other corrections or additions? Okay, all in favor?

Planning Commissioners: "Aye."

**It was moved by Commissioner Beverly Zigmond, seconded by Commissioner Alberta de Jetley, then unanimously**

**VOTED: To approve the July 16, 2008 meeting minutes with the amendments as noted.**

## C. LANAI WATER WORKSHOP NO. 1

1. **County Department of Water Supply representative**
2. **State Commission on Water Resources Management representative**
3. **State Public Utilities Commission representative**

Ms. Kaye: Okay, tonight is a workshop. It's one of the first in a series of workshops on water resources for the island of Lana`i. We have three presenters tonight. A representative from the County Department of Water Supply, and the State Commission on Water Resources Management, and the State Public Utilities Commission. The way we thought we would run this meeting is the three presenters would give their presentations,

then I'll entertain questions from the Commissioners. After which we'd have public testimony, which tonight will be limited to three minutes on the first go around. And then any written questions from the public, followed by final questions from the Commission.

Mr. Fairfax Reilly: . . .(Inaudible. Did not speak into the microphone.)

Ms. Kaye: Excuse Mr. Reilly I'm not finished yet. If you could just wait one second. There's paper available for anyone who wants to submit written questions to any of the presenters to be funneled through us to the presenters. And there's a sign up sheet if everybody would sign up, I'd appreciate it. Mr. Reilly. On the mic Pat.

Mr. Reilly: Pat Reilly – resident. In previous workshops before the Commission, there has been a past practice to allow the public to engage in some kind of information or testimony as the workshop or the presenters go on. And so I would like a ruling from the Chair because I feel if we wait until the whole "shamil" is done, there are some questions that the public may have to specific presenters that will go by the board. So that's my request. And my personal request was I'd like to have my testimony, three minutes up front, to lay out some questions. And I'd like the Chair rule. Thank you.

Ms. Kaye: My response to that is that we have three really qualified people who may answer questions up front, and that there is paper available for anyone who wants to write their question. Commissioners are encouraged also to write their questions. One presenter may find the second one answers the question that you had in mind. So I think we will stick with this unless I hear any objections from the other Commissioners. I think this would be the most efficient way to proceed. On the mic please Ron.

Mr. Ron McOmber: I too believe that we should have input in this because everybody sitting at this table has not been through this water situation as much as some of us have been through the years. And if there's a gap that needs to be asked of your expert witnesses that, that needs to be asked and you may miss it. So we would like to have that option at the workshop to be able to address that. Thank you.

Ms. Kaye: I believe the way we have it structured will answer any concerns you might have there Ron since you will be able to ask questions of all presenters after they've given their presentation. Out of courtesy, I think we will let them proceed. And our first presenter will be Mr. Roy Hardy an engineer from the Commission on Water Resources Management (CWRM). I think we're going to need some dimming of the lights because he's got a power point presentation. If anyone didn't get a copy of it, it's on the front table.

Mr. McOmber: . . (Inaudible. Did not speak into the microphone.) . . .

Ms. Kaye: No we do not. They're all at a conference. And we are not making any

decisions tonight.

Mr. McOmber: . . (Inaudible. Did not speak into the microphone.) . . .

Ms. Kaye: Yes we did Mr. McOmber and they were unavailable and we had our guests scheduled and we're going forward because we don't have anything to vote on tonight.

Mr. Roy Hardy: I hope everybody can see that. It's still pretty bright in here, but we'll try to do with the best we can with what we have here. Again thank you Planning Commission for inviting – representing myself, Roy Hardy, from the Water Commission – to come and make this presentation tonight and actually give us the opportunity to give an update on some of the things that have been going on with the Commission. And it's been a while actually since the Commission has come over to Lana`i for strictly a Commission related issue. There have been many in the past and I'll go over that tonight.

But the main topic that I wanted to do and present was this Water Resource Protection Plan Update 2008. It's been going on for quite some time, and I think you'll see as I go through this presentation what it is. Just a note and I'd like to show this graphic here. This is from the space shuttle showing that the Hawaiian Islands, we live in the middle of a big, blue, salty ocean. And so we've got all of our islands here which are oasis in this desert of source – this wet desert – with fresh water. And you can see Lana`i is right here. You can see Oahu and the Big Island. But I think you get the point that there's a lot of water around us, but not drinkable water anyway. So we have to protect our resources. And one of the things that the Commission has – we have this slogan Ke Kahuwai Pono which means "the trustee that oversee the rightful sharing of water." And that pretty much sums up the State's role with the Water Commission and what we're charged to do in protecting this resource.

So this presentation tonight, I'm going to go over five points. Basically some of the background on the Water Resource Protection Plan. Following up with what is new in the Water Resource Protection Plan, or WRPP, the acronym. Some of those new things are the sustainable yields that everyone is interested in – what is our ground water – you want to give us on a sustainable basis. Surface water wise, there's something called in-stream flow standards. It may not have that much applicability to Lana`i – you only have the Maunalei Gulch – but nevertheless it's a big update in the plan. And then lastly, I understand that there was going to be some questions about designation, so I added that in – designation status for Lana`i and what that's all about in terms of the Water Commission.

So first I'll start with State Constitution. This is Article XI, Section 7, which basically says that the State has an obligation to protect, control and regulate the use of water, Hawaii's water, for the benefit of its people. Within that same section is all the guys up there in the

fancy building on Oahu, the legislature, has to provide for this water agency that will regulate the rule and basically implement this protection for the benefit of the people. So the legislature came up with this water code. This is the law, §174C. It was enacted in 1987. And I'm just going to pick out the pertinent parts in relationship to this water resource protection plan. And what it says here – it's a little bit difficult to see but – there is a need for a comprehensive water resources planning. And to do this, the water code identified this object called the Hawaii Water Plan. So amongst the many things the Commission is suppose to do, this is one of the items – this Hawaii Water Plan. So what is this Hawaii Water Plan? But before I get into the details about that, I just wanted to mention that this plan and all the other things that are associated with the Water Commission and how they implement the code is this visual if you will – it's kind of tough to see – but that's the scale of justice if you will. But there are things to balance, and that's the protection of the Public Trust Resources, and I'll go into a little bit of that – explaining what that is. And also the Commission is tasked to ensure reasonable and beneficial uses of our water. And of course, it's a balance between these two and that's how the Commission looks as a general policy when it goes about implementing the code and how this relates to the plan. I'll get into that.

Just a little bit more about the Public Trust Resources – these have been better defined through the Supreme Court. Many of ours, I guess, our contested cases and issues that have come before the Commission have ended up before the Supreme Court and they have helped to identify in the State Water Code what exactly our Public Trust Resources. It's not that clear in the Water Code. I guess the justices of our Supreme Court have identified them as four. And basically, the resource itself – that's kind of a no brainer – aquifers and surface water or in-stream flows. Domestic use, which is what you and I need for our personal convenience for survival. So that's a Public Trust use as well. It's not identified in the Code as such, but the Supreme Court has verified that. But there's also this traditional and customary rights and this usually pertains to native Hawaiian rights, and it really has a lot more to do with surface water. And then last, but not least, is Department of Hawaiian Homelands, DHHL, reservations of water. And these are current management areas. Lana`i is not a water management area, so it doesn't really pertain here. But it does pertain to other areas. And so again, the visual – on the bottom here – is to balance these Public Trust Resources. Again, it's reasonable and beneficial uses, or the end uses out there against these public resources.

So with that in mind, with that policy of balance, these are the detail of the Hawaii Water Plan components. At the top here of the list is that Water Resources Protection Plan that I just highlighted in the circle. And this is what the Commission is tasked to do. It helps to set the ground work. But there are eight parts in total. And just briefly really quick, there's these State water projects plan; agricultural water use and development plan – that's done by the Department of Agriculture; the Water Quality Plan – that's done by the Department of Health with the State; and all along the bottom here, you have your yellow boxes which

are called, in the code, the Water Use and Development Plans. And that's where the County comes into play. And all these plans – you can kind of look at the title of the County Water Use and Development Plan – it's basically taking your development plan at the County level and looking at water use and how it's affected based upon the constraints of these other plans above. Now this is kind of an old way hierarchy or thinking about it, and if you just look at the water resource protection plan, which we are going to talk about more, and we bring up the water quality plan to the same level, what you have is the quality side of the equation and the Water Resource Protection Plan really identifies the quantity side of the equation – how much is available.

Then if you go down a level, we have two State Plans – State Water Projects Plan and Agricultural Water Use and Development Plan. And if you consolidate all of the County plans into one box, then you have the County, at the bottom here. So what happens is all these other plans, they go about their own pace of being developed. And ultimately they should be feeding, all these should be feeding into the water use and development plans at the County level. And this year, I've highlighted these three zones if you will. The reason why we do this, at the top is protection, quality and quantity. In the second box, that basically identifies the State's needs which is something that code points to you that the State needs to identify. And of course, at the bottom, which is served by the plans above, is the private and County's needs, and basically where all the land use decisions are ultimately made at the County level, through zoning. So basically that's a big home rule issue. That's part of the water code. So that's kind of the overall of Hawaii water plan.

Focusing on the water resource protection plan, that's one component of the eight there. A little background history – it was originally adopted in 1990. So that was the first time it was adopted. Mink and Yuen were the consultants. It was mainly just concerned with ground water protection, and not too much. And I'll go into a little bit more detail of that later. There was an attempt to update that draft in 1992, but it was never adopted. Because of the status of all of the other parts of the plan, there were still in their (phonetics) stages – baby steps. The commission said hold off, we need to think about this a little bit more and provide a better overall framework. And so what happened is that through a lot of discussion – again, I guess it took eight years – they came up with this integrated resource planning framework, which was adopted by the commission in 2000. And this framework provided the guidance for all of the components to ensure that they all worked together and they weren't running off and doing their own thing. So with that guideline, the staff level embarked on updating this water resource protection plan.

So in October of last year, we came up with a revised draft. And this was available for public review. Wilson Okamoto were the consultants. And I'm sorry, I don't why this projector is hiding the bottom there, but basically, public hearings were held on Lana`i. I believe it was the 12th of December of last year. We came over here for public comments to the draft plan. And the comment period closed in January 11th of this year. What

happened next was that at the end of June, we had taken all of the public comments. We got about 400 or so, individual ones that were different from each other. And we identified and addressed them. We actually formed some ad hoc committees, if you will, to clarify some of those comments. Many of them were on the ground water and sustainable yield portions of the plan. And after going through everything, we decided that there were really no major changes to the methods and the logic behind what we were trying to do. But there were several data corrections. In regards to sustainable yields, there were really no comments or changes to in stream flow standards. I guess it's still pretty new to everyone. And lastly, next week Thursday, August 28th, we're going to be going to the commission to ask them to adopt this plan.

So with that, we now have gone through the background to tell you a little bit about what is new in the water resource protection plan here, and what's different. Well we have a nice new cover. Color laser is pretty wonderful, but there's more than just a pretty face. There's actually 12 sections now, where before, there was only a few, and there's three appendices. And I'm not going to go through these, but rather, actually try to identify it for you what the differences between the original 1990 plan and what is a 2008 plan. Again, as I mentioned earlier, the original plan largely focuses on ground water sustainable yields. There's some general discussion about surface water, water shed protection and flood control, but not very much. I went over a little bit of designation, water use permitting, water conservation and resource augmentation, but again remember that the code was passed in 1987. So many of these other items no one had any experience. So it just kind of talked about what the code said. There wasn't anything new. Well since 1990 we've had quite a bit of experience – Supreme Court decisions and so forth. So in the 2008 plan, all of this yellow stuff is included, but then all of these blue things, these blue items, have been added. And some of them are like update to ground water sustainable yields. But there's a lot of other items that are really new, like drought, existing and future demands, the monitoring programs – how are we measuring things – and that kind of things. So a lot of new issues that we went over and try to set the ground. But I'm only going to concentrate really on these bullets for this presentation, which is again, the update of the sustainable yields. Everyone is very interested in that. And then to go over the surface water side. Ground water, we've got a pretty good handle on. Surface water, unfortunately we don't, but a lot of effort has been going into that for quite some time now.

Okay, I skipped over, but we'll jump right to the sustainable yield portion. So here's a graphic of Lana`i. It's actually not new. This is the same way of carving up the pie, if you will, for Lana`i. There's 110 units Statewide. And what I mean by a unit is these aquifer system areas. On Lana`i there's nine of them. So just to give a relative sense of how Lana`i compares to the rest of the State, there's nine aquifer system areas as oppose to 110 throughout the State. These are again just areas, and it's a way of trying to systematically distribute things such as recharge and pumpage and so forth. And with a little bit of geologic knowledge, there's a common misconception out there, I think, in the

public. It seems like it's gotten better. But these are not discrete, independent aquifers. There's actually aquifers within these areas that are different. We've got cap rock, basal, confined, high level – you have perks – you have all these different types of physical aquifers, but they all remain in these area and so that's a way of organizing things. So don't get confused and say that an aquifer system area is the same as one aquifer. And that's what we try to make clear in the plan.

For Lana`i, and actually, for the rest of the State, there wasn't much change to this approach in terms of dividing up the areas per island. But what did change was that there was new and better information, hydrologic information that we put into our hydrologic equation of recharge, sustainable yield and so forth. So that's kind of the ground map, if you will, and this is Lana`i portion. And then what is sustainable yield? Well the code defines it as – sustainable yield means the maximum rate at which water may be withdrawn from a water source without impairing the utility or quality of the water source as determined by the commission. So what does that mean? Well, there's really three points. First off, is that it's the commission's discretion and decision to set sustainable yields and no other entity can set the ground work for the water resource protection plan. So it's the commission that says, hey, this is how much water we think is available in this area based upon the best information we have. So that provides guideline for all of the other Hawaii water plan components. You've got to know what your constraints are. Sustainable yield can vary depending on the circumstance.

For example, everyone normally thinks, what is the sustainable yield? How much can we pump? And what's the magic number? Well for the Eva Cap rock area, the commission set sustainable yield as individual well chloride limits. The Eva Cap Rock is a brackish source but it's where our second city is located on Oahu. Dual water system, a lot of wells, and non-potable demands are met by these wells. And so trying to set a quantity number, there was actually a quality limit – chlorides – so all of the wells out there, whatever you're pumping you can go ahead and pump. However, your well can not exceed a limit of 1,000 parts per million. If you do so, you've got to stop pumping and let your well rest. So that's an example of a different type of circumstance sustainable yield. Is it a flow rate?

Another example is well infrastructure limitations. Actually Lana`i is one of them because we did a numerical model on this island several years ago. And Pearl Harbor is another one where there's a lot reliance on the infrastructure. And we actually had a numerical model which was able to estimate using various scenarios what would be a safe or sustainable yield.

Again, sorry, for the – I guess our lamp is reaching the end of its useable life so it's reminding us over and over – I can't seem to get rid of that. But the last bullet there is that, again, the latest update of the water resource protection plan, considered the new information and hydrologic data. And we developed – this is new – we developed ranges

of sustainable yield. Whereas before, there was this one number slapped up there. There's a range now that we were looking at. However, with this range, we selected the minimum number in that range. However if there was data and there was justification for an alternative sustainable yield, we also considered that. And we tried to be consistent throughout the State in doing this.

So, again, we produced a range of sustainable yield estimates. Now, the various methods of estimating sustainable yield – I'm not going to go into them because it could take up a whole evening describing each one – but the main models were this one here. This is RAM. All you old timers who are familiar, remember this one. And this stands for Robust Analytical Model. It was something that John Mink came up with and it uses Darcy's Law, and water budget and balances, and it comes up with a sustainable yield number using what he felt was a quick and dirty way of estimating sustainable yield based on flow phenomena. There was – let me see, this was RAM2, which was an update of RAM1. Actually what that did was it started using deep monitoring well data to incorporate what us modelers term as solute transport. But basically what that means is getting the way chlorides move in the water based on deep monitor well data. Deep monitor wells go all the way to the salt water and we can see how it changes from salt to fresh – using that information to update the RAM approach.

And then third, there were various, over the past 18 years, commission actions. Eva Cap rock is one of them – looking at chloride limits – but also other areas where we did numerical modeling. This is much more detailed analysis. Also, updated recharge analysis. There has been many, many recharge analyses over the past 18 years by various agencies, consultants, the US Geological Survey. So anyway, these were basically the various methods. We're looking at many methods. Not just one. And what did each one of these methods come up with as far as a sustainable yield and it produced the range. With that range, we opted to pick the conservative approach by picking the minimum part of this range, unless data justified otherwise. Now it says major changes include – what that refers to is we got a lot comments about this method, from other experts, hydrologist and so forth and we had ad hoc committees that were established to clarify their public comments and we discussed many things. And some of the major changes included this recharge estimate revisions. One of the things that we tried to do in the original version in October 2007, was to be consistent with the Department of Health. What the Department of Health had was thing called SWAP. That stands for Source Water Assessment and Protection program. What they did was island wide, they came up with numerical models and recharged numbers, and they tried to do a broad brush for the entire State. And we thought, okay, that's great. Let's piggy back on what the Department of Health has done. And not only that it's more efficient, but it makes it consistent. Because if they have these numerical models based on these recharges and constrains, then we better be using the same thing. Otherwise, the left hand will be talking to the right hand. One of the problems with SWAP was, however, is that it really – and I'll show this in a bit – slides to come – is

that they really didn't do that good of a job on their recharge estimates. They did a lot of interpolation between areas that I would say – recharge estimates that most of the experts agreed were pretty good. And two points, you don't know what's in between. They just kind of interpolated. The problem was we never really were able to see that's what they did because SWAP – what it is, is source, water, assessment and protection – the goal of that SWAP program was to basically assess the vulnerability of potable wells or wells that people are going to drink. And through their modeling, they're going to establish capture zone where as a well pumps, water is going to flow to the well using these flow models. They defined these areas which may affect land use updating of the well. So if you have like say a garbage dump or something above a potable well, it would show how much of that dump was going to affect the well or not.

Part of this was because of 9/11. Unfortunately, the Department of Water Supply did not want to release this to the public. And in asking the Department of Health, we didn't even get this until a few months before we finished this plan in October. So it's kind of a rush thing that we did, but we said, that's the best way to go about it. After the comments, though, and the comments with the ad hoc committees, we decided that it's really better to go with the public USGS recharges that have developed over the years and not use this, interpellated way of guessing of what recharge was. So that was kind of a major change between the October version and the new version that's coming out in August. And so I think that's an improvement. There was also discussion about, earlier we were looking at we'd only use published data. But there's a lot of stuff out there in the public that was available that we didn't have at the time, and was submitted as part of the comment period. We wanted to include that so we said actually this is not published. But anything public – so anything that has gone to another agency and the government, we can use that data. We wanted to be more inclusive.

Also, we wanted to notice the difference between basal aquifers and high level aquifer data needs. I mentioned that we normally pick the low end of the range for sustainable yield. We said that if there were some areas where you say you had a deep monitor well, and other items that basically provided sort of an early warning system, we could move away from the minimum if there was enough analysis that justified that. But we didn't have anything for high level. And we sat down, we talked about that, and actually we came up with a better product which identified what we would do with high level. Because high level, obviously for Lana`i is a big deal. But it's also a big deal on other islands, and primarily the Big Island, on the Kona side because more and more, they're relying on high level water there.

And then lastly, there was just a lot of data collection gaps that we identified. So that was kind of the main thing about ground water protection updates between the comment period and what is going to the commission, come next week.

Just a little bit review here. Again this is RAM. Many of the sustainable yield is the minimum numbers that were selected. Still, you go with RAM. We use new recharged numbers that came out from the USGS, plug them into RAM, and RAM very quickly could tell you what would be your new sustainable yield. Unfortunately the way Mink described his methodology in here is a little cryptic. And hopefully this makes it a little bit clearer. But what he did was, he identified initial ranges of water levels in your aquifers. And there's these ranges from four to 10, 11 to 15, 16 to 20, 21 to 25, and anything greater than 26. Four to 10, that's a much thinner type of aquifer than something that's greater than 26. There's a lot more storage. I won't get into that, but it's just, physically, there's a lot more storage. And there's a big difference between aquifers within each ranges. And then he had this right hand side. This is a perimeter which he called this initial head relates to this initial head and this equilibrium head. And it's not that easy to visualize. But if you take his equation and rearranged things, this is probably a better way of describing it, which is simply – if you take those values within these ranges and substitute, how is it a percentage of recharge? People tend to, I think, understand that better. So in very thin lenses, where you have four to 10 feet, basically what his recommendations here were sustainable yield is a percentage of recharge. That's a standard hydrologic issue.

And for thin lenses, they're very susceptible to salt water intrusion so you're going to have 44% of recharge as oppose to something that's very thick, like 26, 75% of recharge. So theses are basically the way to, I think, apply these. So simply put it to percentage of recharge.

RAM2 added, again, some chloride distribution because of (phonetics) monitor data, and then you also had numerical models as well. But I just wanted to point that out RAM because the majority of minimums that were identified still came from RAM. I'm showing here the Big Island and this is just kind of highlighting the issue that we had, that SWAP plan from DOH, where we were using the earlier recharge numbers to be consistent. When we use those new recharge numbers, and when we put them into RAM, they had some numerical models here as well. These particular errors on the Big Island were drastically reduced. That raised a lot of concerns for people on the Big Island. And through the comments, and more analysis of DOH's SWAP program, we found out really, they had only could rely on these areas, which were USGS recharge studies. So basically, what we did with these areas was we tossed out the SWAP approach because it was basically just an interpolation. It's hard to justify that. And we went back to the original adopted sustainable yields for those areas.

For Lana`i, fortunately, there was an island wide recharge update done back in 1994 when we did the numerical model for this island. And it's consistent with the methodology that USGS uses now. So there's an updated recharge, more current, than what was done back in 1994 for Lana`i. So we used that. And this was, I guess, where the rubber meets the road. Within the water resource protection plan, we basically highlight the comparison of

all of these methodologies. These here are all your aquifer system areas for Lana`i. This is the island of Lana`i. And here is what was defined back in the 1990 plan, basically, it was three and three for windward, leeward and central areas. That's the middle portion of the island. I'll back up here – these two – this area. So three and three, for a total of six.

What we did was this column right here, there was a number of mistakes in 1990 plan, but it didn't apply to Lana`i. It applied to many other areas in the State. For whatever reason, there were mathematical errors or misappropriation of the percentage of recharge. It didn't match what was specified. So we tried to make this consistent. Lana`i stayed the same. With the new recharged numbers that we developed in 1994, we used those and said okay, well, these are new numbers. What does RAM say its sustainable yield. It should be, if you used those numbers, actually, sustainable yield for Lana`i goes up to five in both sides of hale up there. So, RAM2 – there's nothing for RAM2 because you have no deep monitor wells to help us assess, solute transporter, how chlorides move between the salt and fresh water here. So what we come up with is a range between three and five. And sticking with our approach, we stayed with the minimum part of that range, which is the highlight red column. So basically it remains unchanged. This is different for other islands, but this is what happens with Lana`i.

So that's it for sustainable yields. And onward to the surface water portion. Again, I'll probably just go through this quickly because just for your information because Lana`i doesn't really have that much compared to the other island for sure. So, there are two types. There's an in-stream flow standard determines IFS. I won't go through that too much. But it's basically defining the flow that remains in the stream. And then there also an interim in-stream flow standard. And it's the same thing, however, there's some differences. I'll highlight those in the next chart. There's really no difference. Of course, this hides the bottom. Behind the bottom thing is commission action. And these are the two processes identified in the code. This one is the interim in-stream flow standard. On the right here is the in-stream flow side, IFS. It's a little bit easier to think of this of like a temporary quick fix as you will. And this is something that's a little bit more comprehensive. There's more public review. And also because of the quick fix, this is suppose to be accomplished from the beginning to the end in 90 days – the ending of commission action.

Whereas the permanent ones, there are really no deadlines. Some points to point out. To initiate this, it can be by the commission, or it can be by petition from anyone in the public. A permanent one can only be initiated by the commission. And I guess the drafters of the water code felt when you're going to do something more permanent, they wanted the commission to have a bit more control and they wouldn't get flooded with all these things. Because primarily on the interim side, these dash boxes here, this is the State agency review and public notice and public hearing. This wasn't required by Statute. So in stream flow standards, at least the way the code was written, it seems like it was just suppose to

be something done very quickly or to respond to a real obvious emergency type of things. Whereas on the more permanent side, you have notices of intent, agency reviews, more public participation. There's actually public hearings identified down here. So what the commission has done, they said, you know what, we still think that the public hearing process is important. We're going to slap it in here. But the review isn't going to be as robust as the permanent side. So we wanted to show this in the resource protection – at least the process.

Now, I'm going to skip real quick here to this chart just to show you. This is setting an in stream flow standard. Now if you think an analogy – if you looked to the analogy of sustainable yields in ground water – I'm going to try to hide all of these things here. The little blue box, that's the hydrology. That's all the stuff we look at or we need to look at for ground water. When you look at surface water and setting in stream flow standards, there's all these other things that identify in the code. So it's much more difficult to set in stream flow standards for surface water. Some of things here – I'll just go over the major headings – fish and wildlife – you don't have that with ground water, but you do obviously with surface water. You have recreation, eco-system maintenance, aesthetics, water fall and those kinds of things – Hawaiian rights, conveyance of water. There's a lot of ditch systems from the plantation days. There's more talk about water quality. Also hydro power, navigation and in this last red box here, non in-stream uses. And this is a big difference too because we don't talk about that – ground water. And the main thing is being economic impacts. Like keeping water in the stream or taking out of stream. It's a big deal. And it also talks about looking at present and potential – crystal balling things. You didn't have to do that with ground water sustainable yield. So, it's a much more difficult analysis. And that's why the commission has been wrestling with that for so long. And we decided to go with this more interim approach.

Why do we go with the interim? Well basically just base it on the best information available. We can't answer all those boxes. We modified the process to give a greater flexibility and to allow more public review in the process. And something that's new, surface water wise, are all the hydrologic units or areas for surface water where we have nine for ground water. We actually have 32 on Lana`i. And basically these are drainage areas. The only one of real importance to Lana`i is Maunalei gulch. We have that stream. Statewide, there's 558 units, so this is new.

Just a little bit of background and current status on in stream flow standards Statewide. Actually interim in stream was adopted back in 1988, and 1992 for the rest of the State. And basically it was defined the amount of water flowing in the stream on the effective date of the standard. They didn't quantify it. Basically, it just kind of grand-fathered all of the existing diversions in. The Supreme Court said that's not good enough, you got to actually come up with some numbers and start looking at those multiple boxes – here, all these guys. You can't just say whatever it is, and the stream is good enough. You've got to start

doing this, so we'll be spending a lot of time in dealing with those. These are some of things we've been doing. Actually, we were finally able to get two additional staff, staffers, to help us on the surface water – a geologist and hydrologist. We also have some verification of stream diversion statewide – a $600,000 contract to do that. Right now, I guess, we're on the island of Kauai trying to assess the stream diversion that people have registered. Inventory of stream, channel alterations – not only diversion, but also channelization is important, so we're trying to get all of the flood control project and where on the stream it's been channelized. And also, lastly, this method for measuring. Measuring ditch and open channel flow is much more difficult than a well. Wells are through pipes. You can put meters on. It's a lot different and more difficult with open channels – from ditches – and a lot of these diversions are in very inaccessible places.

Anyway, that's kind of the programs that are going on, and these are some of the priorities that are happening right now. Nothing on Lana`i, but we are doing a lot on the East Maui. If you're reading the paper, you've probably seen that. You probably also heard of Na Wai Eha, which is on the west side of Maui. Punaluu on Oahu. Again, east Maui, there's 27, in varying priorities. And lastly, Moloka`i, we're working with the Moloka`i Irrigation System. So a lot of stuff from Maui that's for sure, from the County of Maui.

This is the last portion of my presentation, which is the designation. The Water Resource Protection Plan goes and discusses this more in detail for the past 18 years. In 1990, only the center portion of Oahu was designated as a water management area. What that means is people have to justify and come in for a permit for their end use. They have to measure up against the public's trust and do that balancing act. That's what has to happen. Well since then, the windward side of Oahu, the entire island of Moloka`i and then Iao were designated as ground water management areas. And then recently, at the beginning of this year, we had our first surface water designated area. And that's presently going through a bunch of things – contested case on some of the applications and setting up interim in stream flow standard. So that's the map layout of the these management areas . . . *(Changed cassette tapes) . . .* In these areas.

Lana`i designation update – real quick – there were actually two attempts to designate the island through petitions. And the commission made a decision back in 1990 – March 29th to be exact. And also a second attempt in 1997. In both instances there was a decision by the commission not to designate the island. They didn't feel it met the criteria which is in the code to designate. But in lieu of that, they did come up with these conditions as far as, we won't designate now, but these things have to happen or we might – one of them was that Lana`i Company would have to start immediately commence monthly water use reporting. Lana`i Company basically does that. They use a 13 period reporting frequency. And quite frankly, they're one of the better reporters in the State, on an island wide basis. So that condition is met.

Secondly, the Company was to monitor the hydraulic situation so that when water levels reach 80% – this is something that's in the code – then they can institute public informational meetings. This is something that the commission is required to do. They basically wanted Lana`i Company to stay on top of things before it reaches that. And monthly water use reports help with that. And also, the current public involvement to the Lana`i Water Advisory Committee, and their meetings, we feel this condition is met. People are on top of things, more in an open matter.

Third, the commission wanted the Company to come up with shortage plan in case something unforseen happened, what would they do? That was approved back in 1991. It basically said the residents would be the last to suffer. The things that go first would be the golf courses and so forth, if a water shortage was declared. So that's been approved. There was this amendment back in 1990. Back then the ultimate build out I think was something less. It was 4.2 or 4.1. For whatever reason I remembered this, the Department of Health Chair set it at 4.3, and what he said is if any withdrawal, and this is on an annual average, ever exceeded 4.3, which is under the six million gallons per day, from the current infrastructure, it would trigger the commission to institute designation proceedings. Just an update on that, the current 12 month moving average for period four, so I guess that's about April of so that we have on file, is about 2.3 million gallons per day – actually which is the highest it's been since 1990. But still, you know, quite below the 4.3 limit.

In 1997, we went through the exercise again. Again the commission denied designating. However, they said to continue the informational meetings – I guess with this Lana`i Working Group Report at the time – again, later, the Lana`i Advisory Committee was established and that satisfied that condition. And again, work with the water use and development as adopted by the Maui County by ordinance. We're still waiting for the adoption of that officially, so that's continuing.

Some more, again, formation of the water advisory committee satisfies the condition that is more community input to the plan. There's this Lana`i Company provide progress report on its watershed management activities. Basically the fencing and the controlling hunting in the forest to protect it because the fog drip from the study that was done back in 1994 was highlighted as a crucial component that wasn't looked at before. It's not submitted to the commission, but rather to the committee. And this is again on the fencing and hunting issues, and the commission feels this is satisfactory.

And lastly, the LUC is to provide regular updates because of all the changes of the Manele and Koele project and conditions they have set to keep us informed. They do, the last we've heard, I guess, this Manele project and the use of the high level brackish sources, whether they can or not use wells #1 and #9, and I guess maybe even #14 I suppose. We're still awaiting the LUC decision like everybody else. So that's basically the conditions and the update of the designation. I just wanted to throw these in. That we continue to

monitor. This is something I pulled out way back from the designation proceedings to give you an idea. Here's a sustainable yield. This is a million gallons per day and these are the years, starting at 1988, when we started this, sustainable yield of six million gallons per day. Here's that commission limit of 4.3, and these lines are the monthly values that have been recorded from all those sources on Lana`i, and this is the average. And this bright white line is what we use to compare it against the limits. So far below it. You can notice that this goes only to 2002. I know it's difficult to see. We do have an updated software now. And just to give you an idea, the data goes into a more robust data base now, Statewide, so we can do a lot more fancy things. Again, this is the flow, but it only goes from zero to three. It doesn't go all the way up to six. I guess six would be way up here. 4.3 would be somewhere over here. This is from 2002 to the present, so you can see it's again two million gallons per day. It was dipping, I guess, back in 2004. But since 2005, it's been steadily rising, and the latest, again, that period for April of this year. The average has come up to about 2.3 million gallons per day. So we continue to monitor the situation.

I also wanted to show pumpage isn't the only thing we're looking at. This is a graph of water levels. These bars are the pumpage – again million gallons per day. You've seen those in the previous graphs. On this side is the water table in this high level aquifer – the elevation. Now these numbers are hundreds of feet. So wells #1 and #9, you move that decimal point over a couple, you're looking at about 500 to 600 feet above sea level. And wells further inland, you know, about 1,000, 1,200, 1,400 feet, and they've all been pretty steady. And in fact, I guess, since 1997, there has been actually a slight rise going on. Some recovery going on, mainly because I think pumpage had decreased dramatically from the pineapple days to the resort days.

Basically that's all I wanted to present. And that's our website, it's been update. And again, thank you for allowing us to bring you guys up to date on what's been happening with the water commission and protection of Lana`i and its resources.

Ms. Kaye: Thank you Mr. Hardy. Commissioners, you want to take a two minute break or do you want to just go for our next presenter? Okay, let's take a two minute break.

*(The Lana`i Planning Commission recessed at approximately 7:00 p.m., and reconvened at approximately at 7:10 p.m.)*

Ms. Kaye: Introduce yourself and tell us a little about your position with Maui County and your relationship to Lana`i, and then take it away.

Ms. Ellen Kraftsow: Actually our relationship to Lana`i is in the presentation. Hi, sorry to have my back to you. I'm Ellen Kraftsow with the Maui County Department of Water Supply, and I'm the Water Resources and Planning Division's program manager.

And just a little background, these are our systems in Maui County. And what you can see that we don't have is systems on Lana`i. So what are we doing on Lana`i? Actually turn off the light by the screen – that's fine, thanks. So the reason that we come to Lana`i to do the water use and development plan is there are requirements which Roy just went into a little bit for the Hawaii water plan. But for the water use and development plan requirements there is requirements – constitution, statutory, administrative. So Statutory would be Hawaii Revised Statutes, and administrative would be Hawaii Administrative Rules which are the rules for the Hawaii Revised Statutes. And then the County Charter and the County Code all have rules that pertain to the water use and development plans for the counties which involves us doing it.

The first, as Roy mentioned, is Section 1 of the Constitution. It says the State and its political subdivisions have the responsibility to conserve and protect resources which water is on the list. And I underline and its political subdivisions because those are the county's. So it's important for you to know that at the County level, the State have primacy but the County still has a responsibility under the Constitution to protect the resources of the County.

Section 7 provides for a water resources agency which is where Roy works. And then the Hawaii Revised Statutes, the State Water Code, which is Chapter 174C of the Hawaii Revised Statutes. Section 31 set forth the requirements for County water use and development plans as well as the rest of the Hawaii plan that you saw. They have to be consistent with the County, State and Land Use plans. The County pays for doing them. And they have to include the status of water and development, an inventory of uses and sources, future uses and related needs, regional plans for developments, costs, relationship to resource protection and water quality. And the code is pretty – that's already a lot of requirement – but it's further delineated in the rules. The rules usually have more information. So again we have to be consistent with the State Water Resources Protection Plan, the State Water Quality Plan, the State and County land use classifications and policies and county zoning, and we need to be update, the plan, to remain consistent with all those other plans. It's required that you use at least a 20 year projection period, although the guidelines recommend a longer one if there's any doubt about sustainable yield or conflicts on the use. You should use the hydrological units designated by the commission which are the aquifers that Roy was just describing to you and the stream sectors. And you should use the resource inventory from the State Water Resources Protection Plan which is in draft form, published now. I don't think it's finally approved yet, the final, but it's pretty soon. And you should discuss relationships to the State Water Plans, the County Plans and the other plans. That's required in the Administrative Rules.

Also you have to have an inventory of all existing uses including all of these categorizes – municipal, industrial, recharge, domestic, aquaculture, drainage, agriculture, hydro power,

reuse and reclamation, and resulting problems and constraints from developing water to meet those needs, future land use and related needs, regional plans for water development, recommended and alternate plans, and cost of proposed requirements and plans. So it's actually a hefty set of requirements. And then the County Code, within the County, assigns the Department of Water Supply to developing the Water Use and Development Plan. And the plan has to be approved by Council. And it has to be consistent with community and general plans. And the Council adopts it, and it's amended for consistency whenever the General Plan is update. The board holds meeting to approve and transmit it. The Council has 45 days to act. If the Council fails to act, it is deemed disapproved.

Now the County plan that we have to stay consistent with. The last General Plan update – we're getting close – but the last General Plan update was completed in 1990. We have done a couple of water use and development plans on that. The last community plan round took from 1994 to 2002, with Lana`i being approved in 1999. The State water plans that we have to be consistent with – the last completely approved water resources protection plan was 1990, but there's a review draft out. They've made updates on that. I think, Roy, it's within a couple of months, yeah? For the water resources protection plan finalization?

Mr. Hardy: . . . .(Inaudible. Did not speak into the microphone.) . . .

Ms. Kraftsow: Next week. That's very soon. The State Water Quality Plan – I don't think there's been an update since 1990. The State Water Project Plan was 2003. Agricultural and Development Plan – 2004. Department of Hawaiian Homelands, there is no plan for Lana`i. I already did the County Plan, why is it going up? So the Lana`i Water Use and Development Plan in 1990 was prepared by a consultant and drafter from the department. They got together and gathered data and drafted the plan, and they held a couple meetings for input. The major issues at the time, as cited in the plan, were the low sustainable yield. And at that time there was a planned use of 64% of the total sustainable yield. The loss of pineapple and what that might do to both the economy and the growth plans, and also the water use and recharge. The community plan emphasis on tourism and diversified agriculture. The desire for good environment and small town, and avoidance of sprawl. And it recommended incremental development with concurrent monitoring, protection of the aquifer from contamination or damage, and substitution of non potable ground water for potable and other alternate systems were possible.

In 1992, a consultant also drafted the plan – consultant and staff – but mostly consultant, and they did work with the community group or task force. And they did a lot to improve the data base on consumption and unit demand. The issues were still the ending of the pineapple economy. The need for improved monitoring and use management, and the low sustainable yield. And they recommended improved metering, leak detection, landscape and other changes, an improved hydrologic data base, dual systems using non potable

water for irrigation, active conservation programs and a community task force.

And then the Working Group Report in 1997, they had a balance interest group meaning there were developers and people who were opposed to developments and people with different meanings. The major issues were the designation challenge that had come up and again the low sustainable yield; the consumption per unit and use type analysis and the challenges of putting that together; the system analysis, the inputs, outputs and losses didn't always make sense; and there was a need for strategies for conflict resolution. It recommended additional storage for Koele Golf course, management and protection of the water shed, establishment of well operating guidelines, establishment of dual systems and alternative sources including possibly desalinization, landscape conservation, and an on-going forum for community involvement.

And now this go around of the water use and development, that was sort of the initiating impetus for this particular go around of the water use and development plan that we're finally finishing now. So we've been working with the community now for 10 years.

So then in 2000, additional requirements came out from the State. These are guidelines called the State wide Framework for Updating the Hawaii Water Plan. So we need to draft the county water use and development plans in coordination with the commission. There needs to be substantial and credible public involvement. I think 10 years would probably qualify. There needs to be a clearly defined objective and criteria. There's an explicit process which I'll show you in a second. You should consider multiple forecast, not just one. There needs to be explicit recognition of the Hawaiian Homelands, any Hawaiian Homelands, and current and future needs for them. You need to itemize your capital needs – public and private – that would be a source development that's required. Regional plans for water development, recommend an alternate plans and costs, demand and supply measures considered. That means measure you would take within the system to improve efficiencies and reduce unaccounted water – that's the supply side. And demand side would be measures you would take to encourage customers to utilize less water. It should also allocate water to land uses, discuss resource impact, discuss any policy issues, include an implementation matrix, be consistent with State and County plans, and be in compliance with applicable regulations.

This is the process I told you about. We started before this was built, but this is what the process is now that the State requires. You get together and you define what your objectives are and how you evaluate whether or not you meet your objectives. Objectives could be something like maximize the reliability of the system or minimize the cost of operating the system, or maximize protection of the resource. Those are the types of objectives that you're usually talking about. You do a resource assessment and you preform multiple demand forecast. Resource assessment is basically looking at what you have available to you now and what you could have and multiple demand forecast would

go into. You create a broad list of options to meet needs. Now this could be anything from drilling new wells to towing glaciers from the arctic or squeezing moss – anything – a broad list of things that could conceivably work. And then from that broad list, you do a preliminary screening and you form strategies that tests them against criteria. Include some review of the uncertainties and select a composite strategy which is a combination of those options that meets your needs, your demand needs, as well as the policies that you come up with.

And because we started – we knew when we started with this committee that we were going to be updating the water use and development plan, and it was before these guidelines had actually come out. But we knew the State was going to integrated resource planning. So what is integrated resource planning? Basically, it's planning that includes consideration of not only new source, but of demand and supply options ways to be more efficient. It's suppose to consider all cost, not just the economic cost, but also the environmental and social economic cost. You should have a strong participation component. You should explicitly consider policies, so not just a forecast that say, well if trends continue this is what will happen, and so this is how we build. But also, if the community plans or the group have any objectives that they want to meet that say they want anything to go in a different direction, that should be included in the plan. There should be explicit consideration of uncertainties. There should be measurable criteria and on-going evaluation. And this is a diagram from their guidelines of the process where you come up with your demand forecast, and your objectives kind of simultaneously, and you characterize your resources, and you define your uncertainties and then you form strategies and test them. And you come up with final recommendations.

Well, we came up with a modified IRP process before these guidelines were written and this is the one that we're following, but we're trying as much as possible to follow both. The modified IRP for Maui County, and in particular for Lana`i, said that we would come up with a plan that has within it a discussion of the regulatory framework and context, descriptions of the systems, a range of demand forecast and analysis. Not just one, capital and operational considerations, we would consider and supply side options. We would address resource issues and resource protection and contingencies and discuss policy issues and there would be an implementation matrix.

And this is what we originally planned to get – I don't know how well you can see these pictures, but the first are two folds – butting their heads against each other. And the two at the bottom are two birds that are beak to beak – obviously in harmony. And we had originally planned three meetings for Lana`i. Well 10 years later, here's what we learned about that plan. We couldn't do this in three meetings unfortunately. We probably could have done it in less than 10 years, but not less than three meetings. But we didn't call them objectives. But objectives would be things like enough water for agriculture, availability – these are not your objectives, so I'm just running through examples of

objectives that some of other groups have had – enough water for agriculture – something that's there. Something that provides a reliable resource. Something that protects streams and forest. Something that's sustainable that's low cost, that acknowledges DHHL and cultural resources. These are the kind of objectives that other communities have come up with, and they're not really that different. In Lana`i what we did was we were discussing what are the critical issues. And they really kind of turned themselves into objectives.

So the #1 item that came up in Lana`i was protection of the Hale Watershed Forest, which we'll go into later. Another issue that came up was the low sustainable yield again – and sustainability then would be that objective. The need for agreement on water allocations. The need for continued community involvement. The need for operational guidelines, conservation measures and milestones, and other things that I added in a different color because it wasn't part of that formal discussion where we listed these measures. But I do think that since then it's come up many times in a group that the age of the system and the small size of the customer bases and therefore the small size of the revenues is also a serious problem for this system.

Then addition to those kinds of issues, there were issues of monitoring and accountability that the system needed better metering in some places. The system status is really old. And some of the pipes are translight or steel. It's an old leaky system in many places on the island, not everywhere. There was difficulty reconciling pumpage and demand data. And there needed to be tracking mechanism for changes. You have some project districts on this that nobody really certainly, exactly at every level of the build out status. And also the condition of the water shed is changing too. The model may have indicated a potential as much as five, rather than three, in each of those sectors of the aquifer. But the more recent model also indicated that the status of the water recharges very dependent on that Hale Forest, and that Hale Forest is declining. So there needs to be some way in the plan to be able to address and meet those changes should they occur.

So this is your ground water, and I'm not going to go into that very much. Roy already discussed it. But in the kidney within kidney, or the kidney bean with the kidney, where it says windward and leeward, those are the two aquifers. Each of which have three million gallons, which is your six million gallons a day primary source of water.

And I didn't put the new water resources protection plan surface water areas. I apologize for that, but this is the traditional auhupua`a. And what I have here, on the top right, is a picture of taro lo`i in Maunalei where taro used to be grown. And I've been reading Monroe and read discussions of people who use to grow rice and sweet potatoes and actually even had to harvest their sweet potatoes from canoe after a heavy rain, in Palawai, which is unbelievable to me – and seeps of the north end of the basin. So clearly, once upon a time, this island had – it was never – in recent memory of human history that I've read so far, anyway, it was never, you know, flushed with lots and lots of stream. It's been

apparently for 100's of years, but it still had a lot more water than it has now, within recent generations of memory.

And this is a map – I'm sorry you can't see it better – but it shows the aquifers and the wells overlaying each other. If, those of you who are sitting towards the front – the triangles, the blue triangles, are actual wells that are use. And sort of turquoise house shaped things are wells that are older or are no longer in use or didn't work out in the first place or haven't been developed to work out yet. And what you can see from this is that almost all of your wells are in fact in one three million gallon sector of that six million gallons – two system sector. So you have wells #1, 2, 3, 8, 6, 7, 9, 14 – 4 is just on the border – all of those are in the left hand or the leeward section of that aquifer.

Now this is a demand forecast that is consistent with the forecast that were done for the other communities in the community plan. By that demand forecast, using an elasticity of one, which is what we use in all of the other areas, your demand would go up to by a high estimate as much as 3.2 or 2.8 by 2030. So this community has been growing relative to the other areas around the County. It has been growing slowly, but it is starting to increase. This is the actual numbers which probably from back there is no point of putting up – you can't see them. But if you use 2005 as a base year – this is based on the economic forecast adjusted for and done to be consistent with the community and general plan – this particular one – if you use 2005 as a base year, your end point is 2.6 million gallons. If we're using 2006, your end point is 2.7 gallons – 2.77 gallons. Using 2007 as your base year, your end point is three million gallons by 2030. And I compared that to just a simple take a base year number and grow it by a percent. So I used 2006 as base year, on the right side. And you can see if you were growing at about one percent, you'd be down around 2.4. So the forecast that you saw here, works out to about a 1.4% growth rate, which is exactly the rate at which Maui and much of the country is increasing.

A 2.5 % growth rate would be a boom economy. And this is a range of forecast that we did. This is using three base years, 2005, 2006 and 2007; and then running them within an elasticity of one which is the elasticity that we're using everywhere, and which calculation showed everywhere else, is the right elasticity but we were not able to do those calculation. It went much faster. And you can see the highest end point there. Those high end points, those work out to like a 2.5% growth rate. If you had a booming economy, that would be what it would look like.

Another way to look at demand is to itemize pending projects. And I know you can't see this, so I apologize, but these are just lists of projects that are pending for Koele, Lana`i City and surrounding areas – the irrigation created in Palawai, Manele – and those are totaled. And in using that, we came up with a few scenarios what they would look like – if they were build out, what would the demand be in 2010, 15, 20, 25, 30 and beyond, and how much of that water would be pumped, how much of that water would be potable? How

much would be brackish? How much would be achieved through some alternative method be it conservation – whether it be conservation or desalinization or towing glaciers – whatever it would be – and how much would be reclaimed water. This is one plan that was recommended at the last meeting that we had. I don't know if that will be the final plan. We've, at this point, discussed nine of these scenarios which is good because we're suppose to discuss multiple scenarios. So whatever the selected scenario ends up being, there will be a range of forecast and measures to meet it.

This is a break down of – and I'm not going to linger here, but anyone has question about – in this scenario, what would the brackish water use in Manele be by the year 2025 – that's what this table is. So it's each subdistrict broken down by source of water. And then the plans are suppose to look at the finance and system economics including things like the average cost by district and the cost of operating wells, boosters and pumps. We were able to do a little bit of the first couple of things on this list, at a basic level, not good enough for engineering design. Remember, this isn't our system, so we don't have the kind of data to do this. But we came up with estimated cost, rough estimate cost. You know, there are a lot of tanks on this system. For our own systems, we have a cost at every single tank and every single pressure zone, what it costs to serve water. We could not do that for this system. We don't know enough about how water is distributed – from which pipe to where and so on. But roughly speaking, based on the spread sheet, with some assumed cost, we're assuming like 40 cents per kilowatt per hour based on 2008 rates. $125 a barrel of oil and everything. Basically Lana`i and Koele estimate cost – this is not to customers now – this is to the utility to operate and do not necessarily include all of their cost. This is just those systems versus in this location versus another location just so we can see where its expensive to serve. Estimates are about $1.87 for Lana`i City and Koele, $1.48 for the grid at Manele, and $1.25 for the brackish system

Those are estimates. We can talk about that later if you want. Now we looked at a number of resource options and some of these, the committee is actually is seeing for the first time as well because this is some of his updated work. But basically, you could do new wells, be they're fresh or brackish. If you're not treating them, the cost would be the same. We looked at option, one option, on the leeward aquifer near Hi`i tank, one near well #5. We looked at one near Kauiki on the windward side; one near Kehawai Ridge. We looked at one a Ma`alau, one by Maunalei. And then we looked also re-commissioning Maunalei, shaft and tunnels and a couple different scenarios of that. We looked at brackish wells to mix with fresh to serve – highly brackish wells that could mix with fresh to serve irrigation or even potable. Brackish wells that would be desalted – desalting sea water for irrigation or potable. A couple of permutation of that.

And this is a map which unfortunately you really can't see. Everything I have here is just not showing up too well. It shows up really well on screen. Just showing some of the options are they're like black circles with yellow in the middle. Can any of you guys see

that? No, okay. Can I borrow your thing? So there's one. There's a couple up here, and let's see there's a couple up here. You see this red area here? That's an area – we talked to DLNR – we had our consultants speak to DLNR to find like where's your best habitat for us, to make sure we don't interfere or ruin any last remaining species of anything. Which they would technically shouldn't be allowed to do legally anyway.

So, in the plan and in the future when I ever get all these things entered into something that I can show you. It will be on the web posted for draft review. There will be a time for you guys to make some comments hopefully. But those were all done, for each one, he did a sheet like this. But again, you can't see too well, don't worry. But it has things like – I can't see my own – variable, cost, operating cost, maintenance and labor and design and capital pumping and average facility output. But there's a like a sheet that analyzes every one of those options and then levelize the cost. Because some things, like if you do a new well, you put in, you have a pretty large capital expense, and then you're pumping it everyday. If you did, we don't have one in Lana`i. But for example if you did a large ground water reservoir, your initial expense would be immense – it's hugely expensive. But then you're saving money on your operations. So to levelize those costs, some things are a lot of money up front, and some things are more money to operate but not so much money up front. They look at like a 25 year operating period. And what would they cost over a 25 year operating period. So for Lana`i – wait a minute – why are these slides mixed up? Anyway, we looked at leak detection and repair, recycle water use, covering the brackish reservoir – the 15 million gallon reservoir – rate design and pricing, irrigation restrictions, landscape retrofit, high efficiency fixture, growth restrictions, source protection – okay there's a slide missing here. I'm just going to cover the demand side options. There's this list of new source options already. I guess I already listed it. Besides those, we looked at toilet rebates, target retrofits, shower head give away, direct install of shower head, urinals, water efficiency clothes washers or dish washer rebates, automatic range shut off, soil moisture sensors, irrigation performance and scheduling programs whether it audits or just giving automatic shut off values, low water use landscape. And in the end and after looking at all of those options, and coming up with all of those sheets, we put a summary together of all the different options and what they would cost? And what it works out to is your cheapest well is the well #15 and #11 that they're about to drill. On a levelize cost over the full life of the option, about $2.14. These may not be per thousands. These may not be absolute, but they're correct relative to each other - these costs.

A few of the wells are relatively inexpensive but what's really impressive is that some of the demand side management and supply management programs that you can do are more cost effective – less than a dollar for 1,000 gallons, so they really are. The things that you should be looking at first, conservation, demand side management, just by considering the cost. Then those costs normally would be complied into candidate strategies. And candidate strategies could be incremental development of wells to distribute withdrawals and keep pumpage, or primarily using desalination, using maximize conservation. You can

use a least cost scenario – whatever mix of options that costs the least. Those are the kinds of strategies you can put together. We didn't go there. To do that, this is something we did for Maui – there's a lot of very detailed information that you need about what flows are going where, from where, to where. And that could come up with – you would have one reference strategy and then you would be able to see, visually, compare it to how the other ones costs – more or less relative to that and how you preform the pumpage. But we didn't go there for Lana`i. We have an initial screening and cost for a whole list of options, which are then – there's enough information there to make some reasonable choices with.

Again, the next thing you do is how do those options compare against the objectives that we've listed before and what do you need to add to the plan to make sure you meet those objectives? So our water working group – I mean, a lot of the work that I just showed you was preformed by a consultant or by discussion – some of it was preformed by me and then fixed by the consultant. But what we really worked with in Lana`i for the most part is, a lot of these policy issues. This is an example of why water shed rose to the top. On the top left picture is some pretty good remaining water shed forest. And then with each successive – down the (phonetics) to come in – you start to loose your under story or maybe you get some grazing and then the end result can look like the bottom right. And this is all Lana`i so you know how much you're losing and have lost historically.

And so there were a series of meetings and finally a big community summit where we talked about different fence options. And this is the one that was selected. It was initially estimated to be $800,000. I'm learning from the company that it's turning out to be a lot more expensive. And this was finally known as the fish fence. And then once the partnership was formed, the Fish and Wildlife Service helped the conservation department to come up with an incremental, slightly adjusted alignment that was this. And those little triangles in there are critical, endangered and threatened species.

And this, the green line, actually has been built. And the pink line is what the company is working on next. And the turquoise line is the remainder of the fence – the third increment – it's actually the one where all the critical species are. And the partnership established in 2001, actually, at least partially Kanepu`u Group was very much involved in it too, but the Water Advisory Committee was also very instrumental in getting that going.

Demand has been a big policy issue for us. There's a pace of resource use policy that we've been discussing that this table would reflect. This is the recommended table I saw before. I don't know if that's going to fly, but we spent a lot of time going over the issues of the availability of source, the declining water shed, uncertainties about demand flows, and opportunities for conservation. And this is one of the options that came out of that discussion.

There are actually State priorities that are set relative to allocation. And we, of course,

once we come up with anything, we need to make sure that we're in concert with those priorities. I think that will be fine on Lana`i though. As far as operational guidelines and monitoring, this is an example. This is well #6. You can see the top is the pumpage. The next graph is the chlorides. The next graph is the water levels. And then the next graph is the precipitation. And the well is actually highlighted in yellow – which one? – there.

I have to talk to Roy about this and I will need to get back to you on this. He's showing water levels actually increasing, and there are a couple like that. But I have several wells that we've plotted, based on the periodic water reports that were entered and plotted, and they seem to be declining in a number of wells. So if that's not the case, we'll need to know about that. The group has agreed so far to some of the action triggers – three of them – and the fourth one is still under discussion. At 3,000,000 gallons a day, the Lana`i Company agreed that they would commence new source design and planning. And that should say 3.52 – my apologizes. You would have new source installed. Not by 3.53, that's 3.52. And by 4.3 designation proceedings. Because of what we believe to be the decline in water levels, we were thinking that distribution of withdrawal should occur sooner and there might need to be more than one step to the year 2030. But that has not been agreed upon yet by the committee. The other thing that the table, 5-1, that I showed you, the table for pacing resource, has that is still up for discussion in the committee, is that at 650,000 gallons, the Challenge at Manele Golf Course, any additional irrigation use for the entire Manele District Project, any additional non-potable use would have to come either from conservation or from some alternate source that needs to be defined, which is not yet defined. And so we've listed a bunch of options and there will be more. But those are discussions based on resource issues that are ongoing.

And again, I pushed page up, when it should be page down. And the other thing, of course, was the continued venue for community involvement which the Lana`i Water Advisory is, but in the draft plan, there is a draft ordinance for the continuation and establishment of Lana`i Water Advisory Committee. Right now, it was established by Resolution of our Board. Without a sunset, but it was explicitly for the purpose to be advisory to the Department of Water Supply for the drafting and implementation of the Water Use and Development Plan. Many members of the committee would like to be an on-going, official established body. At this point the committee could be eliminated simply by another resolution by the board. That isn't likely to happen, but many committee members feel that it should be more established. So that's another issue that's dealt with within the plan.

We have a well head protection policy. Again, I apologize for these graphics – they're really clear on my screen – but we've had modeled two-year, five-year, 10-year time of travel to the wells. So basically what that means is a drop of water falling on the ground, could reach the water from which the well draws within that period . . . *(Changed cassette tapes.) . . .* So the next step, for us, to finish entering – there's a lot of update information

chapters that I'm still trying to put into the software and programs so that people can read the updates. And then there needs to be review of the updates which will be, you know, they should be out already. There's one that's being proofread right now, to maybe brought by Friday, here. The Chapter should be coming pretty soon, pretty quickly – one after the other – hopefully. We need to complete this issue discussion with the LWAC and get as far as we can get. By the time I finish drafting, whether or not we've reach agreement, we're going to go ahead and make our proposal whatever it be, internally. And then allow the committee and the board to review it at the same time, so we can get it on to Council.

We have to draft an implementing ordinance. So what the plan is, more than 300 pages long. It's probably more than 500 pages long. But what from the plan is actually going to be required by ordinance, versus, is it just a policy that's passed by ordinance? And there needs to review of the updated draft by the administration, the board, the Department of Water Supply, Council and ultimately the State Water Commission.

I'm pressing the wrong button, sorry. And that's it. I was going to say thank you or as we say in the Water Department, *"tanks 'eh."* And if you have any comments or questions or suggestions, they are welcome. The other computer has my address actually at this point. But it's not on here, so my apologizes. Thank you.

Ms. Kaye: I would just add that anybody that's available, the Lana`i Water Advisory Committee meets Friday. The fourth Friday of every month, at 11 a.m., at Hale Kupuna. And Ellen, if you have any questions, she'll be back here in two days, if you can't get them to her tonight.

Okay, we have another presenter. We're very fortunate tonight to have Lani Shinsato from the Public Utilities Commission. She's going to share with us a little information. I understand you've been here before and spent some time on Lana`i. Welcome and thank you.

Ms. Kaiolani Shinsato: Aloha Ka Kou everyone, commissioners and members of the community here tonight. My name is Kaiolani Shinsato. I'm here on behalf of the Public Utilities Commission, or the PUC. My official title there is Commission Counsel, which basically means that I'm one of the attorneys for the Commission. Thank you very much for inviting us tonight to participate in your workshops. Frankly, I know that what we do at the PUC is somewhat of a mystery to a lot people and governmental agency so this is good for us to get ourselves out there and explain a little more about what we do and who we regulate. I received the letter, I guess, that you sent a couple of months ago that had a nice list of topics that you would like each of us to discuss. And I thought it might be more useful, rather than have me kind of address those topics that I think would apply to us specifically, I'm just going to give some general background and I'd be happy to answer questions if you have any after I'm done.

So first, I'll just kind of give you some background about what we do and who we regulate, and kind of what our primary functions are. The PUC is responsible for regulating all public utility companies in the State that provides electric service, telecommunications, private water and sewer companies, as well as motor carriers and water carriers. And our purpose is to ensure that these companies provide these essential services to the public at a just and reasonable rate, that they provide safely and reliably. But we also allow these companies to earn a reasonable rate or return.

We have three commissioners and they're the ones who make the decisions for our commission and set the policy. And we have several sections in our staff, and those include audit, engineering, research, enforcement and legal. And that's where I'm a member of legal. The staff's responsibility is generally to review and analyze information as it comes into us in our proceedings, and then to advise and give recommendations to the commissioners.

We also have three district representatives. One on Kauai, one on the Big Island, and one on Maui. And our district representative on Maui oversees Maui as well as Moloka`i and Lana`i. And so as I mentioned we regulate private water and sewer companies. So on Lana`i, we have two such companies. One is Manele Water Resources, LLC, and they provide sewer service in the Manele - Hulopoe area. The other one is Lana`i Water Company and they provide water service in Lana`i City, Koele, Kaumalapau, Manele-Hulopoe, and the Lana`i Airport.

Manele Water Resources was fairly recently issued its authority by us, to provide sewer service in a docket that I actually worked on. They were issued their authority in March of 2007. Lana`i Water Company was issued its authority in 1988. And the commission approved the current effective rates that are being charged by Lana`i Water Company in 1996. And to my knowledge I don't think they've come in since then for a rate increase. I also understand that Lana`i Water obtained potable water that they delivered to their customers through Lana`i Holdings which is an affiliated company of Lana`i Water Company. I also understand that I think in the future Lana`i Water Company wants to sell non-potable water, or irrigation water, and they would have to come and seek our approval if they wanted to do that.

I'll next briefly go over the process by which we authorize utilities to sell water or sewer service to the public. If they want to be authorized, they have to come in and file an application with us for a Certificate of Public Convenience and Necessity, or what we call for short as CPCN. And in that application, they're going to tell us stuff like what the proposed service is, what the service territory is, their financial backing, their experience of their management, what their proposed rates are, and their rules and regulations – all of that becomes embodied into a tariff. And the legal standard that we use to look at these applications is whether the company is fit, willing and able to provide the service. And if

we, after looking through everything that they give us, if we deem them to be fit, willing and able, then we'll issue them a CPCN.

And now more about rate setting. Kind of the whole purpose of that is like I mentioned earlier, we want the rates to be just and reasonable, but we also want to allow the utilities to remain healthy, which means that they can earn a reasonable rate of return. So, once a utility is issued a CPCN, and they're providing service – if their circumstances change, for example, their customer base grows larger or if the cost of service increases then it's the utility's obligation to come in and file a general rate case with us, an application to increase their rates. And by Statute we are required to look at these rate cases within nine months. However, for smaller utilities, which is the category that most water and waste water utilities fall into. And this is if they have an annual gross revenues of less than $2 million, then we have stream line process for them and we review their rate case application within six months.

Also by Statute, we're required in all of our rate cases to have public hearing, where ever the utility is located. And so we will come out. We'll have a hearing. The whole purpose is to hear comments from the customers or anyone else who wants to comment on the proposed rates of the utility. And then, lastly, I just wanted to clarify jurisdictional roles. We, the PUC, does not determine issues like water allocation, water rights, water usage. That is more for the water commission as you've already heard. So usually, utilities will get the necessary permits that they need for usage before they come in to seek approval from us to operate or have a rate increase. That's basically all I wanted to tell you. If, again, you have any questions, I'm happy to answer them.

Ms. Kaye: Thank you Lani. I had a request from a commissioner to take a five minute break and we'll come back and deal with questions, and public testimony.

*(The Lana`i Planning Commission recessed at approximately 8:00 p.m., and reconvened at approximately 8:07 p.m..)*

Ms. Kaye: Okay, I've been reminded that typically we do commissioner's questions to the presenters first. So if the three of you could be close to a microphone, I'll just open it up to commissioner questions for any of the presenters.

Ms. Zigmond: Roy, first of all thank you for the presentation. I learned a lot but that means actually that I have a lot more questions than what I learned. I don't understand the designation process. Okay, I'm looking at the one slide that had the green and you said that was designated water management areas.

Mr. Hardy: Correct. The map of the islands with Oahu and –

Ms. Zigmond: Right, and Lana`i is all green.

Mr. Hardy: Is all green?

Ms. Zigmond: It's all green. So that says –

Mr. Hardy: No that's Moloka`i that's all green. Lana`i is –

Ms. Zigmond: I mean we're all white. Okay.

Mr. Hardy: Yeah, you're all white, so you're not designated.

Ms. Zigmond: So we're not designated. Okay.

Mr. Hardy: Correct.

Ms. Zigmond: It says – sorry we've been talking about being green – I got confused where I was. At some point, it said that the petition was denied. I'd like to know who petitioned and I can't read it on this little one, but it said the petition to designate Lana`i was denied. Could you please tell us who and that whole process?

Mr. Hardy: Both were from the public. I believe the first one was from John Gray – that was before 1990. And the second one, I don't recall who, the individual, but it was from the public again that petitioned again for designation to reopen it again. LSG – Lana`ian's for Sensible Growth, so it was a group rather than individual – LSG, Lana`ian's for Sensible Growth.

Ms. Zigmond: And why did they ask to have it designated?

Mr. Hardy: Well basically in the water code there's a number of issues for designation, things such as 90% – the use of water is going to exceed 90% of the sustainable yield where the water levels are declining, chloride is rising, authorized plan uses, land use designation, and things in that nature – there's a number of criteria. I believe there was a little bit of, each one of those things, and there was also serious disputes at that time. So, the petition itself was, for both of those, I don't think they were identical. But they reiterated I think the basic concepts of all those things. Basically water levels are falling, land uses are going to be going above 90% - those kinds of things. And I think at that time, especially in 1990, evidence by some of the conditions of non designation. There really wasn't much information available, so that's what people were contending. So going through the designation process itself and developing these findings and facts, and getting this information and then turning it around, the commission found that none of the criteria for designation were met at the time – in both in 1990 and 1997.

Ms. Kaye: Can I ask a follow up question to that?

Mr. Hardy: Sure.

Ms. Kaye: You said authorized planned use.

Mr. Hardy: Right.

Ms. Kaye: So if there was a plan that was adopted that even on paper could reach 90%. That's a trigger?

Mr. Hardy: It's a trigger and all of those – I believe there's seven of those – and their triggers that the commission shall consider. It doesn't mean if it exceeds that, boom, automatic. It's just stuff that the commission needs to consider. Is it eight for ground water, and six for surface water. Right, correct. Authorized planned uses is something that's been authorized. And normally – well that's kind of ill defined I think, authorized planned use. But I think if it was like community plan or something on that sort, we would definitely say, here's a project, here's what's been approved as far as moving ahead, it's authorized and even though it's not built, it's got all the approval in place to move forward. And if you tally it up and it goes above 90%, then it meets the criteria. For Iao, for example, that was definitely one of the criteria that was met. Even though the commission didn't designate it. I can't remember the dates – 2004 or 2002 or something like that. But anyway, that's how it works.

Ms. Kaye: As long as you have the hot seat, commissioners, any questions for Mr. Hardy?

Mr. Ruidas: On page #13, you don't have any data after 2002 till now?

Mr. Hardy: We do. We're graphing according to the water –

Mr. Ruidas: Yeah, the one with the red line on it.

Mr. Hardy: That's actually, the one that you're pointing to is actually the data is after 2002.

Mr. Ruidas: That's the new one.

Mr. Hardy: The third one is water levels which is –

Mr. Ruidas: That one.

Mr. Hardy: The two colored ones are ones that I pulled up from the previous designation proceedings and those kinds of things. We have a new tracking system now, so I just

trying to throw that in. But we do track it. And our company does – the latest period that was reported to us is period four, which I guess is around April/May time.

Ms. Kaye: I think Lani referenced this, but before one goes to the PUC, permits has to be granted through you for a system such as ours. Correct?

Mr. Hardy: Correct. As far as the sources are concerned.

Ms. Kaye: Are there any permits pending before you now?

Mr. Hardy: Pending – we had several that have been approved recently. Well #3 is one of them. A little further back, we had well #14, which is another one, a newer one. I can't recall off the top of my head any others, but those are the sources that have gone through the permit process.

Ms. Kaye: And once the permit is granted, what period of time, going forward do they need to be completed?

Mr. Hardy: There is typically a two year limit. And it's a construction permit – pump installation permit – and it's issued to the contractor. Before it use to be issued to landowner, applicant, and we've actually gone through the trial and tribulations and growing pains, the water code itself identifies only the driller is suppose to get these permits. And like I said in the past, we've had landowners and everyone kind of involved in it. But that cause a lot of problems – having too many cooks in the kitchen if you will. Getting reports and data in, sometimes it wouldn't come in and then they would be well the landowner didn't sign, or we can't get the applicant who is a lease to the landowner. So we went back to the code and said okay, we're just going to deal with the drillers on the construction side of things and concentrate on those individuals. One of the things we do now though is we do issue certificates once all of the construction is done. Of course, there are responsibilities like water use reporting, things like if your well goes back, the landowner, by law, is responsible for sealing. So we identify and start splitting up the responsibilities now. But as far as the permit goes, it's only to the contractor, and it's usually two years.

Ms. Kaye: Okay, could you just really briefly define in your opinion what is reasonable and beneficial use? Those are pretty broad terms.

Mr. Hardy: Reasonable and beneficial use, well, what we have traditionally thought of is, basically, you're not wasting, you're using only what you need. However, that has changed with many of the Supreme Court's decisions. And there are things that you have to look at as far as reasonable and beneficial is what you need but at the same time, what the Supreme Court has identified and we've update water permits to get closer at this in management areas, is looking at things such as what are alternatives to your use. And

how these things impact and a variety of other issues such as DHHL needs, whether they impact surface water. That's usually not the case here on Lana`i. And a number of other items. And one of the recent developments or tools that we have in terms of identifying reasonable and beneficial – and again, this is really pertinent in management areas – is irrigation requirements because it's so variable. I don't have graphs here. And if you were to look at, and if you were a farmer, you know, all depending on the weather, and your usage can go up and down tremendously as oppose to a domestic system or municipality.

And there are County guidelines based upon on what the Department of Water Supply has identified. So we typically follow those. We get a feel what's a reasonable amount for a single family home. And it differs by county by county. We use those as guidelines. And the Commission uses that as guidelines in the decision making. For irrigation, one of the new tools, we have contracted with the College of Tropical and Agriculture at UH. They have an irrigation model that incorporates rainfall, soil type, crop type, irrigation methods and so forth. And when someone in a management area applies they have to basically re-use as tool as a guideline to see, well, how much in your particular area, for your crop in your irrigation would be a reasonable amount. So there's a lot of thought that goes into it compared to in the past which is you're not wasting, you're only using what you need. You really have to justify it.

Ms. Kaye: But when you say irrigation, you're talking Ag only?

Mr. Hardy: Any type of irrigation. It could be a golf course. It could be parks, common areas and things like that.

Ms. Kaye: There was one part in your presentation when you talked about using USGS studies for recharge in order to reach, I think, the range of sustainable yield. I don't think they're the same – connected. But has there been any USGS studies done on recharge on Lana`i that you know of?

Mr. Hardy: Yes, and I was actually part of that back in 1994. There was. Actually one of the recommendation in the water resource protection plan is to update this thing State wide. There is a slight difference between some of the studies now. This is 1994, so this is 14 years ago. When the methodology we used is pretty much the same that they use now. The difference is the time step that we used at the time. We were looking at monthly intervals – taking averages of months, and differences in evaporations, soil types and so forth. Now, the USGS is synthesizing daily time stats. It makes a big difference. Typically when you're looking at daily too, you actually start ending up with a little bit more recharge. That's not always the case. But if you look at the thinking that when it rains and your soil moisture storage is reached, whatever is in excess gets into the ground when you have these big events. You get pulses of recharge. So you may miss pulses in an average of a month or even annual. Daily, you're going to get more pulses if you have a big storm for

a couple of days. You'll capture all of that. It's the same method, it's just a time set difference. So there could be an update for Lana`i, as it was, trying to synthesize daily recharge values.

Ms. Kaye: You mean one is planned or it's possible?

Mr. Hardy: Well, it's one of the recommendations in the resource protection plan. We want to do it State wide.

Ms. Kaye: And USGS would preform this?

Mr. Hardy: In conjunction with, you know, other agencies in cost sharing. For whatever reason, they are able to do it for the Big Island. I was showing you the Big Island and the "pukas" that were there. I guess the USGS, they're not even asking for money from us or any other agency for that matter, but they're embarking on that island first. But the plan is to do it for all the islands.

Ms. Kaye: Okay, this is just simply a yes or no question. I'm very curious to hear you talk about the native Hawaiian traditional cultural uses and I thought you said that there are not any cases involving ground water. It's mostly stream. Is that correct?

Mr. Hardy: Typically, mostly streams. Yes.

Ms. Kaye: Okay. You also talked about the periodic water reports that The Lana`i Water Company produced as complying with one of the designation requirements.

Mr. Hardy: Correct.

Ms. Kaye: And I'm slightly familiar with them. I don't quite understand all of it yet, but the water levels was some – do you know how those are derived?

Mr. Hardy: Yeah, and in fact, we had at one time, we came out and verified. They have air lines. They can measure the levels within the wells. And they actually take two values. They take what they report as the lowest value for the month and the highest, and typically they corresponds to – the lowest corresponds to when the pump is on, and the highest corresponds to when the pump is off – and whatever the highest was at that time. So they have continuous graphs of the water level as it changes through the day, and they take off the ones that are the high and the low for that month.

Ms. Kaye: And again in your plan, or in your presentation, you referenced when a water shortage is declared. Who would do that?

Mr. Hardy: Well the Water Commission does that. That happens in a designated water management area.

Ms. Kaye: I see, so it would not apply here.

Mr. Hardy: Yeah. Outside of it would be – what would be termed a water emergency that can happen anywhere in the State. And that can be declared by the commission as well. I would imagine it would be a surrogate. At least there's this shortage plan that the Company has provided in times of hardship when there's not much water to go around, what would we prioritize? Yeah, they have that plan. They developed it in 1991. And it was something that came back to the community and said, well, how's this? They really weren't that many objections because it was the residents would be the last to suffer. The golf courses and irrigation things would be first to be cut.

Ms. Kaye: That sort of segues into a question of several places in the State have declared a drought. Who would declare one here? Who'd be responsible to determine if drought conditions existed on Lana`i?

Mr. Hardy: That's – is it US Department of Agriculture, I think. And there's also – because they have the monitor. They monitor those things. And also, that's not something that the commission declares. Although you notice, that's one of the things that's new to the protection plan. It's that we do have the State Drought Coordinator. We really don't declare it. Who declares it? I guess, you know, the Governor can ask the state of emergency drought.

Ms. Kaye: But that's Statewide. But you can declare it county by county. But it wouldn't apply to us unless there was some entity on this island that was responsible for monitoring data that would determine if there was a drought. It's not you, but you're not sure who it would be?

Mr. Hardy: Right. No, I'm not sure who – other than the Governor and the USDA. I can check into that and get back to you with our monitor.

Ms. Kaye: That would be great. Thank you. Commissioner any other questions for Mr. Hardy? Shall we put Ellen?

Ms. Zigmond: You had mentioned well infrastructure limitation on Lana`i. Could you speak to that a bit, please?

Mr. Hardy: Well infrastructure limitation – I guess an extreme example is if you have an aquifer – and let's say it's the Pearl Harbor aquifer and let's say Lana`i water level is under 1,000 feet above sea level – as far as we know, it's fresh water all the way down to sea

level and probably deeper. No one has ever drilled a well past sea level, I believe, here on the island. But, we have this chunk of water that the aquifer or mother nature is willing to provide if its optimized. Now if your well infrastructure is such that you've put it in, you may limit yourself from achieving that optimal amount. In other words, say you had a 1,000 foot water level for you aquifer. If your well only penetrated the top one foot of that aquifer, and you start pumping, obviously water levels are going to dip down below 999. You're only going to be able to develop that much water because you're going to start pulling air. So for Lana`i, how that works, is that based upon the studies and the scenarios and the numerical modeling that we looked at – what it was that it looked as if infrastructure could really only produce up to about 3.5 million gallons per day. And that's on the, I guess, Ellen suggested that most of it is on the leeward side. So that's the three million gallon, anyway, that's above sustainable yield that we've set. However, if they were to deepen their wells, all of them down to sea level, the models would probably pull out much more – maybe up to six. So that's how infrastructure plays into constraining the amount of water that you can optimally pull from mother nature, as far as we understand, would be willing to give up or produce.

Ms. Kaye: Shall we put Ellen up next? Questions for Ellen? This wasn't in your presentation, but I was doing some homework and found some interesting information on water charges that Maui County does. And your ag water, are you familiar at all with the rates or this is not a good question for you?

Ms. Kraftsow: Ask the question and I'll tell you.

Ms. Kaye: My understanding is your water usage charge per 1,000 gallons [is] up to 10,000 gallons is $1.55. Ag over 30,000 gallons is $0.90. In other words, you give a preferred rate to agriculture projects in order to encourage them.

Ms. Kraftsow: Okay, I'm at a disadvantage here because my landlord – I just paid the rent – it includes the water bill – but basically we have a tiered rate for non-ag. The more you use, the more you pay. For ag, I believe it's a flat rate and then there is a point at which it goes down. There's two tiers, I believe, not three. It doesn't go down progressively. And basically they pay like everybody else until they're into the ag – where they're seriously doing ag. It's difficult for farmers to do ag even at the rates that we have. And why? Because water is such a big expense for farming as is land. And so there's a policy to preserve agricultural land. So, yeah, the ag rates are tiered differently than the other rates. It's probably a longer answer than you wanted.

Ms. Kaye: And does Maui County, in any case, blend higher chloride blend water with fresh to make it potable?

Ms. Kraftsow: Yes. Not many place, but a couple places.

Ms. Kaye: Okay, and I found reference, the Board of Water Supply agenda from this August – this meeting coming up on the 28th – has reference to upcountry water supply and all over the agenda are determinations of drought. How is that reached for your purposes?

Ms. Kraftsow: Our droughts are declared based on a set of triggers. One is if precipitation is low and the forecast continues to be low. Another has to do with, for upcountry, the water levels in our ground water storage reservoirs and how they are and what the demand is. Those are really the major criteria right there. And for Central Maui it would be for precipitation and if we start seeing water level issues in the wells.

Ms. Kaye: Final question for me is one that was on the letter that originally went out, and that's in reference to ordinance 3502, Bill #68 that was passed in 2007, the water availability bill. And we owe gratitude to former Commissioner Reilly for getting us started on these water workshop, and I think that was an original question that had been listed in the letter that went out to all of the invitee.

Ms. Kraftsow: The "Show me the Water Bill" basically wants to ensure that there is a long-term source of water for any new project that comes on. And it is at the subdivision application stage that somebody, even if they have their discretionary approvals, has to verify that they have a source of water. There are two ways basically that you can verify that you have a source of water. One is if you are being served by the Water Department and you have managed to obtain a reservation by us. That means the research has been done and we've determined that there is adequate water to offer you a reservation. The second way that you can determine and demonstrate an adequate source of water is to submit an engineering report for the source of water that you intend to use. Now that's not enough necessarily to guarantee that you'll be deemed to have an adequate source of water. Because say for instance that you have a well and it's producing adequately and you plan to use it, and it's adequate in its current use plus the project you're applying for based on that well, will fit within the capacity of that well. However, it may be that you also have other projects for which you've identified the same well. So you will be required to show that you have your existing and pending approvals that have been granted but the demand has not yet been realized. For instance, take an example for Koele Project District. Koele Project District has – I forget if it's 525 or 535 single-family units are allowed within the ordinance that established – the ordinance in the zoning established that project district. Only 13 of those 535 units have been built. But something like another 498 if you add the Pine and this and that, all these separate projects, have at least been applied for and are at some stage of either approval or waiting approval. So using that as an example, say if you had a well that you were going to put in Koele or that you already had in Koele, that's clearly adequate to serve the 13, you would have also been adequate to serve – say if 200 of 498 had already been approved – it would have to serve the 13 plus the 200. And then it's really being handled by Jeff. It's not clear if the other 298 that will applied for but not yet approved, it would kind of be first project, first served. Or whether it would be – you

know, the developer would have to determine. But basically you have to show that you have an approved source with a good preliminary engineering report and that it is adequately served the project that you're applying for, the existing uses that depend on it, and any other uses that have also been approved that may or may not be showing demand but depend on the same source.

Ms. Kaye: A follow up question then. This has really confused me. For districts where subdivision approval has been given, does this legislation apply?

Ms. Kraftsow: If the subdivision has already been completely approved, then they have probably grand-fathered, and it will probably will no longer apply unless they're going for another subdivision on the same source. Then they have to show that it's adequate to serve cumulatively everything. But if the subdivision, as I understand it, there can be stages of subdivision approvals. So if it still has a stage of approval, it may still be subject to review.

Ms. Kaye: And that would automatically come to the Board of Water Supply?

Ms. Kraftsow: The Department of Water Supply. And right now, directly to our Director.

Ms. Zigmond: I have two questions please, Ellen. Some of those graphs and charts you have, I guess, are they public documents?

Ms. Kraftsow: They're actually in the water use and development plan, and I have actually got them here for all the wells. Can you remove that piece of paper. It's hard to see really, but –

Ms. Zigmond: Well, I was looking at pending projects, demand table, potable water distribution systems.

Ms. Kraftsow: Yeah, they'll be in the plan, and I have them here. I apologize, but I kind of purposely didn't make handouts because I'm still not 100% happy with those numbers. And I didn't want to hand them out when there's still modifications coming. But the pending projects and all that are in. My staff submits every quarter a report on projects pending and how much water that represents in every district. And although we don't have any meters on Lana`i, and we don't make any revenue on Lana`i, and we don't receive any tax revenue, so we don't make a penny for any of our involvement on Lana`i. But we do have every quarter a report that summarizes the totals. What we're finding is that there's still too many gaps in the information. So we're working on improving that data before we put it in the plan.

Ms. Zigmond: So at some point we could get –?

Ms. Kraftsow: As soon as we get it up. There will be a review draft on website which is www.mauiwater.org.

Ms. Zigmond: Thank you. And the other thing – and this might be really naive but I guess my confusion stems from the fact that Lana`i's water company is private. So you are crafting this water use and development plan, and I don't understand how the Lana`i Water Company is obligated, or if they are obligated, to follow that plan.

Ms. Kraftsow: Well, you and every staff member and consultant and lawyer in the County probably agree. Basically, it's not clear, but what is clear is that State, by the Constitution, and its political subdivisions which are the counties, by the Constitution, have an obligation to protect water resources. So we're in an assignment of responsibility that has been made. Although we're not clearly the primacy agency, it's normally, I think, accepted practice to assume that there's not an assignment of authority that kind of goes with that. And so what we can not say and what we don't want to say like some of the more complicated analysis that I was showing you that we did for other systems, we're not even going to try to do that for Lana`i. We don't have money or time to spend on that. And we don't really care, honestly, if they put their well here or there. But what the County can say is this is an aquifer within the County and you have to protect it. And your project approvals will be subject to you meeting these requirements – protecting the water shed, number one; demonstrating that you're making an adequate conservation program, number two. You know those kind of things can be set as policies and implementation mechanisms are certainly within the realm of possibility. And they may in some cases involve coordination between the Water Department and the Planning Department. It may not be something the Water Department, in and of itself, can do. But it's certainly something that the County can do. And the plan is passed as a policy and an ordinance of the County. So then it becomes law within the County, or at least of the portion of the better part of the ordinance.

Ms. Kaye: One last question. You referenced – and I was just confused – there was one slide you showed about meeting an alternative source for over 650,000 gallons.

Ms. Kraftsow: Yeah.

Ms. Kaye: What was that all about?

Ms. Kraftsow: One of the entire appendices that's like probably 20 or 30 pages in the plan right now is a thing called conditions of project approvals. And that arose because when we first started working with this committee, there was a lot of disagreement and discussion about what was even required for each project and whether those departments had or had not been met. And one of the conditions about which the most controversy arose, is the condition that, when the Manele Project District was initially passed, they agreed to use no water from the high level water aquifer for irrigation. And then later, there was a suit

brought because they were using water from the high level aquifer because their low level aquifer, other aquifer wells, didn't pan out. And there was a cease and desist order, and basically there was a decision ultimately that, okay, go ahead and use up to 650,000 gallons from the high level aquifer. And it says for golf courses and related uses, or something like, the terms "related uses." Well one faction interpreted that to mean, that's your 650,000 gallon limit applies to the golf course and only to the golf course. The other faction took that to mean that you've got no water for anything but the golf course. And I've heard still another interpretation to mean that you can use that 650,000 gallon wherever you want, but it's for any irrigation. You do it all, be it golf course or otherwise. So what was meant by that one little sentence is a huge argument.

Ms. Kaye: Well, that's what pending before the Land Use Commission.

Ms. Kraftsow: And that's what pending before the Land Use Commission. And so in the mean time, there was a line item put into the proposed Table 5-1. The proposed resource use table and allocation table that identifies 650,000 gallons clearly of non-potable water from the brackish aquifer for irrigation. And anything above 650,000 that the projection so they might need, is identified to come either from alternative sources or from conservation or some other source.

And the Company currently objects to that distinction being made in the table. And the staff is pretty strongly saying that the distinction should be made and I think the committee remains divided.

Ms. Kaye: Thank you. Commissioners any other questions for Ellen? . . . *(Changed cassette tapes.) . . .* Okay, I have one or two. You mentioned and I actually got on your website and looked. Two companies, Lana`i Water Company which is listed on your website as regulated; and Lana`i Holdings Inc., which is listed as non-regulated. Can you tell – do you know why one is and one isn't under your criteria?

Ms. Shinsato: I think I have kind of a basic understanding of the relationship. Lana`i Water Company is the utility and they're the ones who we gave the CPCN to. They operate. The system serves the public. Lana`i Holdings, I believe, is a affiliated with Lana`i Water Company. And I think they own the wells. And they have an exclusive water agreement with the utility. And they sell the water to the utility. And then it becomes a little bit complicated legally because then the issue is what is a public utility? And that's a pretty complex legal analysis. We wish, as lawyers, we always get asked this question, and it's really complicated. And we don't, unfortunately, have a very kind of clear test that we use. It's very task extensive. And I wished we had a number. You know, if you're selling to more than one, then you're considered a public utility. We don't have a nice clear test like that. But one of things we do look at is if you're just selling to yourself, then you're not considered a public utility. And so for that reason, Lana`i Holdings is affiliated with Lana`i

Water Company. And they are selling water to Lana`i Water Company through that exclusive sell agreement. But they really are just selling to themselves. So that's why they have not been regulated by us.

Ms. Kaye: Thank you. And you said before that there is no pending rate requests from Lana`i at all – not the tiered request for potable or any kind of charge for non-potable.

Ms. Shinsato: That's my understanding.

Ms. Kaye: Were there any rate request before the PUC? I understood Lani to say there were not, and I wanted to clarify that there was not only no pending potable tiered rate request, but any rate request for non-potable at all. Because right now it's not being charged.

Ms. Shinsato: That's correct as far as I know.

Ms. Kaye: Ron. Excuse me. We're going to have public testimony in a second. I just –

Mr. McOmber: . . .(Inaudible. Did not speak into the microphone.) . . .

Ms. Kaye: Sorry. I'm sorry. One final question. Does anyone to your knowledge around the State charge for non-potable water use?

Ms. Shinsato: Yes. It is rare, but we do have utilities who we regulate who sell water really for irrigation purposes, and they are considered public utilities. We regulate them.

Ms. de Jetley: Madame Chair I have a question. This is more a hypothetical question. Usually if you're building a subdivision – not on Lana`i, but anywhere in the State – if you're building a subdivision and you have to prove that you have a source of water. So say I'm going to subdivide the lot. I'm going to build 1,000 homes. I've got a source of water. I start my own water company. I'm going to provide water to my 1,000 houses. How does the PUC regulate it so that 10 or 15 years down the line, what happened on Moloka`i won't happen somewhere else? How do – I think this is the first incident of this type of thing happening. So how is the PUC dealing with that kind of a problem?

Ms. Shinsato: That is a really tough question. We, you know, of course, we are in the process of dealing with the situation on Moloka`i. It's very complicated. I think a lot of it has to do with the relationship between the parent, which in Moloka`i's situation is Moloka`i Ranch, or was Moloka`i Ranch and the actual utility. And so when utilities come in and get certified with us, we do look just at the utility. Sometimes in their applications, they say though if there is you know a lack of revenue, then our parent will subsidize us and make up the difference. And that has happened in the past. And it's actually the type of

representation that was made when some of the Moloka`i Ranch affiliated utilities came in and got authorized with us.

And so, I think, in the future, we're going to definitely be more sensitive on to those kinds of representations and really take a careful look to make sure that the utilities are financially viable on their own. Rather than having them rely too heavily on the parent's financial backing. I don't know if that answers your questions.

Ms. Kaye: Any other questions for Lani, Commissioners. Okay, I think we'll move –

Ms. Leticia Castillo: I was thinking about community as a whole. Everybody knows that Castle & Cooke owns a big chunk of this island. And the water has been – who has been regulating the water through here because they are the one that is selling their own water. And what's going to happen is going to be just like Moloka`i Ranch to our people in the community.

Ms. Kaye: Was that a statement or question? Was that an expression of concern Letty or a question?

Ms. Castillo: It's a concern because you know Castle & Cooke is the one that is selling the water for the community. And if they decide to be just like Moloka`i Ranch to get out of the island, what's going to happen to the people on the island?

Mr. Rabaino: This just came to my thought. Is it possible that under the PUC – let's say that they do shut – a similar situation like Moloka`i, is it possible to happen to any island that a water company can shut down and say that they're not making money and not provide water to the general public or communities within that island or communities?

Ms. Shinsato: I have to say it is possible just because it just happened on Moloka`i. But having said that, I'll say that the situation on Moloka`i is unprecedented. It's never happened before in State history. This is the first time it happened, I think, since the commission has been around where utilities say we don't have enough to operate and we're shutting down and they give a deadline. It's possible, but, like I said, it's never happened before except for this situation.

Mr. Rabaino: I guess what I'm looking at is there any safeguard from your area, under the PUC – I'm going to use Oahu where the farmers are fighting with Waihole – giving water to Kapolei. And then you have Hana giving water to Kihei. Is there some kind of structure in your guys area where you guys have a safeguard or some kind of guideline that says this is where it stops. Water must be provided.

Ms. Shinsato: Well, I guess, we have – to use Moloka`i as an example – even though the

utility have said we're going to stop service. We have ordered them to continue to provide service. And that order is in place. So they've got to comply. And if they don't comply we have penalties that we can issue, and as much as $25,000 a day for everyday that they violate one of our orders. So our authority is actually quite broad.

Ms. Kaye: Okay, if there's no further questions, I think it's time for some public testimony. We're going to be limiting to three minutes for the first go around. We'll see how many people want to testify. Leilani, did you get any written questions? No. Okay.

Mr. Reilly: Thank you Madame. My name is Fairfax Pat Reilly. 468 Ahakea Street – resident. First, I really appreciate the commission taking this workshop on. I, you know, having sat through this, that it can be overwhelming. A lot of process and maybe not a lot of information that's immediately usable. Secondly I'd like to thank the County and Roy and Kaiolani for coming over. And I guess since I'm approaching 69, I can say, for many of us, and I know some of you at this table, we've done this for 25 years – ever since – actually 1985, when the company the was bought by Mr. Murdock. And we've been sitting through these meetings and contested case meetings for a long time. I did send a letter a week ago, but I guess I find it takes about 60 days for a letter to get to you. So I don't know 60 days in advance what I want to say, but I did send this letter and did distribute it.

The issue for me is kind of related to some of the questions is that my biggest concern is how do you know the recharge for the Lana`i aquifer? And how is that measured? And my letter essentially says that on August 1st at least the two Senators and the US Secretary of Agriculture did declare the whole State a Federal disaster area due to the drought. And I don't know if Roy remembers, but there was – I didn't want to attribute this comment to anybody – but there was a time I think during one of our hearings that someone said, if you wait till the well levels to drop, if that's your standard of performance, it's too late already. And so I was a little startled to hear Ellen say her figures are about well levels and Roy's might be a little different.

So what I was asking you to do is ask the entities which could be the commission, could be the County, could be Castle & Cooke, to provide you since you have to make decisions related to projects related to water, how do anybody know the rate and trend of recharge on this island for our aquifer. And secondly, what would be the status of funding to implement the resource protection plan that you've got a briefing on tonight? I mean, the basic fundamental question for me is if there's no water going in, all the discussion about how you use the water is kind of moot. So fundamentally the water, you've got to know, and I was hoping there would be some data tonight, how much water – how is that recharge is going for the island of Lana`i.

So I will terminate my discussion with the beep of the buzzer. And I do think it's up to the Chair to decide how public testimony is taken at a workshop. It's just my opinion.

Ms. Kaye: Pat, you can have a second round at this. Let's see how many other people would like to speak tonight and give everybody a fair chance. Okay?

Mr. McOmber: Good evening. My name is Ron McOmber. I feel like a life long resident of Lana`i. What you heard tonight is preliminaries that we heard years and years and years ago as we were going through this water use and development stuff. When we asked for designation, we had this same presentation. It hasn't changed any. I feel sorry for you folks because there is no way that you're going absorb what we heard tonight and to put it in any practical use. What you really need in this workshop is the periodic water report and how is that related to Lana`i's water and what's going on here. That is what you need. You need that more than what you got here. This is fine. What you need to know – you need to have the company people that put that water report together. You need the water working group to come in here and ask questions at a workshop that combines both the company and the water working group and you folks, so you understand what's on that water report. Without that knowledge you have no idea what's going on with the water. We see it every month and we still don't know what's going on with it. So we need to have you folks have a workshop. That's why I came here tonight to see what this workshop was going to look like. This really doesn't do you any good for the apparent concerns that we have here on Lana`i.

So I ask the Chair and I ask the members of this committee, as you move down through these workshops – the next month's workshop is a great one because we're going to hear what the recharge – maybe what the recharge is with up on the Hale. That's really important because whatever he says, whatever that comes out and he'll testify to that. If that recharge changes from 1955, it's going to have a huge effect on what's the sustainable yield of that aquifer is. So if it's not nine million or 12 million or whatever Tom (phonetics) which is the hydrologist for the company say. And if it's not what we think it is. And that's what happened on Maui. The Iao Aquifer was 40 million gallons of sustainable yield at one time. It's down to 20. If they cut this one in half, what you're looking at on the Hale right now is two aquifer, you saw on the map. There's a leeward and a windward aquifer. Both of them are three million. How can you have six million gallons if that aquifer is in half, and they're already using 2.3 million gallons from the leeward side? So we're sitting over here. These are the kind of things you need to work in your workshop. And how close are we – it's not the 4.3 – we're looking at 3.5 maybe that designates instead of 4.3 because there is no way they can pump 4.3 on this island. Not in the way the wells are in their pump.

Well enough of my preaching. You guys have had a hard night. I appreciate you sitting through this. But my purpose for being here was to see what this workshop. You guys need the information and something else. When you guys make decisions on water issues, please rely on the water working group because we deal with this on a monthly basis. It's going to be an open ended thing. Once we get this graph through the County for the Community Plan, that's not the end of it folks. We're going to have water issues here until

this island is long gone. So we're not going to drop it just when we get it sanctioned by the County. It's going to be an on-going proposition, and Ellen knows that. And she wants a perfect document, and I love her dearly, but there's never going to be a perfect document because it's always going to be moving. So thank you very much.

Ms. Kaye: Ron, stay for a second. Commissioners do you have any question for Ron before turn the mic over to anyone else? And Pat I apologize I should've asked the Commissioner if they have any questions for you. Does anyone have any questions for Pat? I heard Pat ask the question. He asked only one question actually in his three minutes and that was how to determine recharge levels. If any of our presenters, Ellen, Lani or Roy, want to deal with that question. That's the only question we have outstanding so far. And then we'll see if anyone else wants to testify.

Mr. McOmber: One question for you. Are you coming back on the 29th on our PUC hearing on the ferry boat?

Ms. Kaye: Ron, you're out of order. Please you can ask her that – you can ask her that privately. This is about something else. Okay, Mr. Hardy.

Mr. Hardy: In terms of recharge, I think I went over that a little bit in the presentation about – we look at basically it's a soil balancing equation. It looks at the type of soils because we need to know how much moisture is stored in the soil.

Mr. Reilly: . . .(Inaudible. Did not speak into the microphone.) . . .

Mr. Hardy: Right, but that's the method. And the best that we have is what we did in 1994. I don't have the report in front of me, but if you looked at the island as whole, it was actually very high. I want to say, I can't remember the number off the top of my head, but it was something on the order – 50 million gallons per day, but that's the entire island. But we really only concentrated on the kidney, the middle. And the older reports from 1990, it didn't include soils and the way we do it now. They looked at annual averages. It was nine million gallons per day. When we looked at the more updated monthly averages including soils, and time steps of a month, we came up to some about 13 to 15 million gallons per day for comparable areas. So that's the best that we have for now.

And the other part of your question was the trend I believe, and I just wanted to add. I didn't show it in the presentation, but we have, the commission – that's one of the recommendations in the water resource protection plan. I didn't speak to that, and that is what's climate change? And what that means for recharge? So we've already entered into contract with the University of Hawaii, with Dr. John Belucca to update what is known as the rainfall atlas. And that was the basis for the 1990 and the 1994 recharge numbers – using the rainfall analysis statewide. That was for data up until I think it was 1984. So

obviously that's like 25 years now. We've got 25 years more data. We wanted to incorporate all of that statewide. And at the same time, look at what is trend and can you forecast. So that's part of the contract. So we just started that a couple of months ago with him. A two year contract. So in a couple of years, we hopefully have a better idea for crystal ball and the trends.

Ms. Kaye: Thank you. Can I ask if there is anyone else that wants to provide?

Mr. Roy Bennett: Good evening. My name is Roy Bennett. And on the water, about nine months ago, there was little episode over here at the Senior Center, there by the School, the fire hydrant – it was dripping. So I called the Fire Department about it. But it took them four months and the Water Company down central – it took four months before they fixed it. From the drop, it went to a trickle. And I called them again about it and told them, and it took another month. I would like to conserve the water that we have. Have somebody in charge to fix quickly. Now if it's a big pipe, you dial 911, that's an emergency. But a fire hydrant when it drips, it's not an emergency to me. Thank you.

Ms. Kaye: Hold on one second. Thank you Roy. Any questions, comment for Roy, Commissioners? Thank you Roy. Thank you for your time. Any other public testimony? Kepa?

Mr. Kepa Maly: Hello Madame, Commissioners – my name is Kepa Maly. And I'm not sure how appropriate this is or not, but I think a part of the history is knowing where you have been, where you've come from. And I think that Lana`i's water history is really – I'm curious if there's been sort of a detailed look into the traditions and history. As an example, we know that now having going through the entire Mahele, all the original Hawaiian language documents, that there's an amazing number of references to Loikalu to the water use, Auwai, to houses in scattered areas. And I think an important part of knowing where we are today and where we're going to the future is understanding where we've been, where people were using water, understanding the value of all the water valley names that are on Lana`i which of course became the places that many of wells were put. So I'm just curious because I haven't seen really much reference to it so far in some of the brief presentations shared tonight – have there been sort of these detailed looks into the historical records and the history of water development. There's a brief message of a Monroes that worked here. But there's more information to that. And if not, I'm hoping that at some point people will really take the time to look at this seriously because there's some amazing information there.

As you know through the Lana`i Cultural and Heritage Center, we are working on trying to compile every native language and every historical account for Lana`i. And eventually that will become available. But I think there seems to be such important planning processes going on now that I hope that – we've done the detailed and graphic works already with the

State for places like Honolu`u for the East Maui system; for Hawaii Island, Kahala mountain – we've done them individually for State organizations or independently. I'm just hoping that at some point that there will be some very serious working opportunities to look at Lana`i.

I did mention to Mr. Hardy one thing and I don't know if anyone caught it, but there are three auhupua`a typographical errors on all of the maps that they're using. And so I'm hoping that before the documents are actually published that all of those will be corrected. That we have the proper auhupua`a names there.

And then this is a personal question as user, and since you brought up the Ewa and things like this. Do we know, as a consumer, do we know how safe Lana`i's water is? There's been reference to the chloride and hepa-chlorine. And when we start talking with families about what appear to be some significant instances of cancers and things like this. Do we have good water quality and understanding it, particularly the hepa-chlorine issues and stuff? Since there wasn't any reference to it this evening other than past reference of chloride, and I wasn't sure. And that was kind of a question if I could just ask as a consumer. And thank you very much for the time.

Ms. Kaye: First of all let me ask you a question. Did I understand you to say that there are sufficient documents that a study of those – and you have possession of that information.

Mr. Maly: Yeah, Onaona and I just finished the entire Mahele which identifies 100 Lo`i that are easily identifiable in the Auwai. As an example, just in Maunalei.

Ms. Kaye: Maybe we need to invite you back to have your very own workshop as part of this down the line. The other comment I would make to what you said is as user those questions need, probably, to go to the Water Company because they're responsible for doing the testing. You're talking about – they are on the list of those invited to participate. They have not yet responded. I would hope that in the next month or so we'd have them on the schedule and then we can ask many of those questions. I'm not sure that any of the presenters here are the appropriate, unless they want to jump in. And Commissioners, any questions for Kepa? Thank you Kepa.

Ms. Kraftsow: Actually, I've been looking at you – I think that's Kepa Maly – I need to talk to him. As it happens, the group hasn't seen it, but the regulatory chapter of the document is going through proof reading now and maybe posted in a week or two. And I did add a section on traditional uses and auhupua`a. And Bob (phonetics) helped me – well he helped me a long time ago to just obtain an auhupua`a map. But I'm not sure the Lana`i one was from him, but I think he helped me with Maui. But anyway, it's not complete. And what does seems to be clear is that there were – I can find just from looking at Munro and Emory and stuff that there were more uses than one would have thought. But I would love

to get your card and talk to you to build that out both in the existing resource section and the regulatory, and to have you look at what I did because I'm not at all confident about it.

Ms. Kaye: Thank you – Ellen, sorry.

Ms. Kraftsow: He asked about water quality as well.

Ms. Kaye: Okay. Go ahead, if you just want to respond to it very quickly.

Ms. Kraftsow: The company is required. There's a rule called the consumer confidence rule, and every year they're suppose to send out a report to all meter holders. And that it is suppose to list any finding or any trace of finding of any contaminant in their system.

Ms. Kaye: Thank you Ellen. They do that. We'll let the Company deal with that.

Ms. de Jetley: I'd like to ask Joe to come forward. A few months ago he wanted me to do a press release with Lana`i Times about the water quality taste wise. Joe?

Mr. Joe Kaakua: Aloha. I'm Joe Kaakua, Director of Lana`i Water Company. We had an American Water Works Association Conference early this year – April. And there's a water contest – which island has the best tasting water, and the winner was Lana`i. And the contest was for every island and we won. We have a plaque in our office. But I'd like to address Kepa in terms of safe water. Roy mentioned the Department of Health's drinking water act. We have to comply with all of their regulations in terms of resource and quality, water quality. And we put out a consumer confidence reports, CCR's. And based on Department of Health's safe drinking water, we have to run all of these tests for chemicals on the water, and we report to you. And you should have gotten a copy. And we post it. And I think all of this done before June. So we've done it. In fact, Sally caught some errors, and we have to do a revision on that.

Safe water is one of things we have to provide. That's one of our conditions, I guess, you could call it. And then the other side, as Roy mentioned, quality and quantity. Quantity is the resource part. Questions?

Ms. Kaye: Thank you Joe. Any questions Commissioners for Joe? I just have one Joe and I would hope that we'll see you up here as a regular part of our workshop soon so we can add you to the list of presenters.

Mr. Kaakua: Sure whatever you need.

Ms. Kaye: Well, the invitations actually went out through I think just to Mr. Saunders and Gary. I'm not sure if you even saw it.

Mr. Kaakua: Actually I'm not on the list. I just happened to stop by.

Ms. Kaye: Well, not tonight. You'll have your chunk of time at a future meeting. I'm going to ask actually the Planning Department to send out a couple of invitations to folks that I didn't understand who needed a more precise address. And we'll have it sent to you. Is that okay?

Mr. Kaakua: Sure. Fine.

Ms. Kaye: Great. Any other public testimony? Anybody want to add to the record tonight? Commissioners, any final questions?

Mr. Rabaino: Roy this is a question for you. You were talking about when they had the map on the leeward and windward side of the aquifers. On the leeward side – it kind of clicked in my head – you said moisture that goes through the soil – the moisture within the soil –

Mr. Hardy: That's part of the recharge analysis.

Mr. Rabaino: On the leeward side, you have mulch – pineapple mulch paper mixed with the clay soil. What is the percentage of seepage going into the soil to the water table?

Mr. Hardy: I can't tell you those numbers off the top of my head. But the soil characteristics are based on NRCS soil coverage maps. And within those, if you look at lots of columns and everything you want to know about root zone, soil types, water capacity and that kind of thing. And those characteristics are incorporated into these recharge models. That is one perimeter that's looked at. And we use this geographical information system that overlays, you know, the soil overlays, evaporation, rainfall, run-off and all those types of things. And you go through the time series and tally up all the intersections of all of these polygon and you come up with these recharge estimate. So I hope I answered your question.

Mr. Rabaino: Not really because if you're looking 3M – versus 3M for the windward side – how do you come up with that number? Because the other side doesn't have any mulch paper. It's just natural land, but it still has, the soil itself, could be clay. That side would have more brackish water than this on the leeward side. What I'm trying to get is, how do you get that, number figure, to be equivalent to three and three? Leeward versus windward?

Mr. Hardy: A fair question. Again, all of the parameters are different. It's wetter on the windward side, but evaporation is less than on this side. And again, I don't know what the soil storage moisture characteristics are, and your vegetative cover as well, root zone,

depth and things like that. I guess it just turned out that way. And actually, it isn't so much – how do I want to say it – to look at these recharge maps, it's not as clean as the aquifer system maps we showed. There's a lot of squiggly lines all over the place, little polygon here and there.

Mr. Rabaino: What I'm trying to say to you is that because of the windward side, you have Maunalei gulch where majority of the water is so called pumped to the City if still active – versus Maunalei on the windward versus the wells that are used on the leeward side on Lana`i.

Mr. Hardy: Okay.

Mr. Rabaino: For replenishing and providing water on this side versus that side. And I'm trying to figure out how can you get three and three? Windward and leeward.

Mr. Hardy: That's what it came out. And I don't know if Joe is still – you guys still pumping from Maunalei? I don't think so. They haven't done that for quite some time I think.

Ms. de Jetley: I have a question because I'm really big on conservation. During the plantation days, they use to have a lot of drainage basins all through the pineapple fields, and there were also a lot more reservoirs where water could feed back into the soil. And now, when there's big brush fires, the Fire Department will use water from ponds at the reservoirs as one source over the Manele Project District. And they'll also use water from the golf course. If we had more of those ponds using non-potable water, wouldn't that add to our recharge? If we had more basins, more catchment basins to catch water, and more ponds that were actually develop that we could use in an emergency of non-potable water, could that possibly add to our recharge?

Mr. Hardy: Sure. Of course, the details in these reservoirs – how much do you allow for infiltration and things of that nature. But if you're going to reduce the run-off which is a loss in the recharge, and you're going to capture re-use water – water that normally goes to the ocean, but now I think you guys use it, the majority of it, on the golf course – certainly that can help increase the recharge.

Mr. Rabaino: I'm just curious, did you ever do any brackish reading at Lopa and Keomoku? Because during the cattle ranch time, had the Maunalei Sugar Company, they had water wells located on the windward side of Lana`i. Have you been to those sites to check if the brackish water level differs from that time to the present?

Mr. Hardy: Not recently no.

Mr. Rabaino: Maybe you should look into that. Thank you.

Ms. Kaye: Okay, any additional questions. Thank you. And thank you to all of our presenters. Joe, I think we're back on the agenda for communications.

## D. COMMUNICATIONS

### 1. July 16, 2008 letter from Fairfax A. Reilly concerning the Jon Shimizu letter of May 7, 2008 related to Condition #14, Manele. *(Copies of the letter distributed at the July 16 meeting)*

Mr. Alueta: I'm not – you were distributed the letter.

Ms. Kaye: This is a communication. It was in our packet. July 16th, signed by Mr. Pat Reilly. And it was in our packet and I'm not sure. The request he's making is not something I think we can handle tonight because there's no one here to answer that question really. But I'm wondering if we could make a point of storing this letter so that when the Company, when the Water Company does come, we can add that.

Mr. Alueta: I think it was put on your agenda because it was communication that was e-mailed to the Commission.

Ms. Kaye: Right. So everyone has got it in their package. Does anyone have any questions or comments about this communication?

Mr. Alueta: I will make a note.

Ms. Kaye: So Pat, we're going to table this until we get the appropriate party to answer those questions. Go ahead.

## E. DIRECTOR'S REPORT

### 1. Past Commission Chair's request to discuss the following:

**The feasibility of changing the zoning of the remaining 65 acres of land donated to the County of Maui by Castle & Cooke for affordable housing. The change would go from its current zoning to the appropriate type of zoning that would make the land ready to be improved.**

Mr. Alueta: I guess section E is your Director's Report with regards to the feasibility of changing the zoning. There hasn't been any change.

Ms. Kaye: Is anybody aware of any change? I'm not either, but we're going to just keep putting this back on. And the open Lana`i applications report.

**2. Open Lana`i Applications Report.**

Ms. Zigmond: Joe I have a question on that. Are you going to say anything that I should wait for?

Mr. Alueta: I'm here to basically to try and answer your questions. If I can't then I'm just going to take a note and find out who. Again, most of these projects are handled by the Current Division.

Ms. Zigmond: Okay, the first three, do you know – will they be – at least the first two coming before us soon? The status on them?

Mr. Alueta: I do not know the status of them. Typically district boundary amendments and change in zoning, you know, we've got at least a four month turn around at least to get reviewed, agency comments out, and draft a report. So I do not anticipate that would be coming before you anytime soon. Let me see the date when it was submitted.

Ms. Kaye: I see 4-12.

Mr. Alueta: That was done in April. So theoretically, yeah, it could come before you within the next few months. I can check to see if it is on the table. I haven't been told that it has been on the next agenda. I have my item. I have a resolution out of Council that I have to bring to you next month as well as scheduling maybe Butch Gima as one of your presenters as part of your workshop.

Ms. Zigmond: Is Butch coming?

Mr. Alueta: He requested to come. I think we're trying to look at what items can be placed on. As we get priority agenda items, we're going to need to get those scheduled. And as time allows, we'll continue with this water workshop that we're doing.

Ms. Kaye: Okay, I'd like to add to those questions. This whole Miki Basin Heavy Industrial, which are the first two. If you could bring us back a bit of a status report – what's been submitted, where it is, you know – because to just have it on the list, doesn't tell us anything.

Mr. Alueta: And again, it's, obviously, you know, a district boundary amendment and change in zoning, so obviously it's in the Miki Basin Industrial Area which has already been designated as –

Ms. Kaye: As heavy industrial.

Mr. Alueta: So no community plan amendment is required. It is where this community has designated they want the growth for industrial type uses. There is no environmental – it's unlikely that an environmental assessment is a trigger. However, it's most likely that in preparation of those documents, that DBA and Change in zoning address many issues that you would typically find in an EA document.

Ms. Kaye: Thank you. The next thing we had in our packet. I think that was pretty self explanatory. Anybody have any questions for Joe on the agricultural and cultural resource surveys?

**3. July Letter from the Planning Director concerning the Lanai Housing Historic Inventory Survey Study.**

Ms. Zigmond: This is just stating that the studies are going to be done. What happens with us regarding that? Anything?

Ms. Kaye: Well it says it's going to come back to us for hearing.

Ms. Zigmond: Yeah. Is it being done now? Do you know?

Mr. Alueta: Sorry. I'm trying to get to the letter. . . *(Changed cassette tapes.). . .*

Ms. Zigmond: Sorry. It says on the back page, throughout the year, the Planning Department will provide progress reports to the Commission regarding these studies.

Mr. Alueta: Yeah, and it looks like it has been contracted out. So I'll get a status report. It says here the consultant is Chris Hart & Partners, and then I'll check with Stan Solamino to provide – he's our Cultural Resource Specialist. Stan Solamino will schedule the consulting firm for the presentation and draft the review.

**4. Hawaii Congress of Planning Officials (HCPO) Conference - September 10-12, 2008, Grand Wailea.**

Ms. Kaye: The next item is the HCPO Conference and Commissioner Ruidas has requested that we make sure that we have an agenda item for the September meeting so we can share whatever information – sort of debrief on the conference.

**5. Water Workshop No. 2 scheduled for September 17, 2008 - US Geological Service and Professor James Juvik.**

Ms. Kaye: Next is the second workshop. It will be next month, September 17th. And scheduled are Gordon Trimble from the USGS Geological Service, and Professor James Juvik. I think he's out of UH Hilo, and is monitoring the fog drip study on the Hale. Is there anyone else?

Mr. Alueta: Most likely since I have that thing, and you're going to have two presenters and a pretty simple resolution. You might have – I don't know what kind of questions will come up, but I'd be hesitant to schedule anyone else at this point in time. And I'll look at the October meeting and I'll contact other people.

Ms. Kaye: Do you have anyone waiting on the wings?

Mr. Alueta: That could go on?

Ms. Kaye: Yeah. That has responded, but just hasn't been scheduled yet?

Mr. Alueta: I think I got forward an email from Butch.

Ms. Kaye: Because there's a young man who works for Castle & Cooke in their reforestation area, Brian Plunkett, and he really should be scheduled. As I said, the only two people from Castle & Cooke that got an invitation were Harry Saunders and Gary Yokiyama and neither of whom have responded, nor do I think they'd probably have much to add. But Brian Plunkett would because he has been actively working up on the water shed.

Mr. Alueta: Is he the same gentleman that spearheading the fencing project?

Ms. Kaye: Yeah. So I will work with Joe or someone to get his specifics. No, one second. We'll find the address and perhaps I'm going to get it right now. But I also wanted to add – we've never sent out an invitation to anybody from the Department of Health and they regulate to a certain extent and should be included in these workshops.

Mr. Alueta: I can talk to my neighbor, that's Dr. Lorin Pang, so I can see if I can get him to discuss that and water quality because their facility does the water testing.

Ms. Kaye: For here?

Mr. Alueta: For like all private water systems. When you submit the water samples, it goes to DOH, and they do the sampling. Actually my mom did those for DOH.

Ms. Kaye: Because I know there's a certain number – I know for example there's a sanitary survey that has to be conducted every couple of years. And someone from the DOH

comes here and does that. And it just would be very interesting, I think, for this group to understand how that process works.

Mr. Alueta: I can also talk to the waste water, the guy that reviews the waste water system, whether they play a part on that. I deal with Roland on a regular basis. I'll just get a generic DOH and see if I can get them to show up.

Ms. Kaye: Okay Steve if you want to be on the mic.

Mr. Steve Bumbar: Madame Chair and Chairman, if you can, in the future, if you notify me I can set up the appropriate entities that can be here to testify on the behalf that are the specialist or are experts sort of say in the different areas that you're discussing. So since I'm now the general manager and I'm here full time. If you let me know, then I can make sure that that's coordinated so we don't have to run into this in the future. So just letting you know.

Ms. Kaye: We don't send out the invitation, the Planning Department does. Joe will follow up on you with that.

Mr. Bumbar: As long as it's coordinating and it comes to me, then I can at least coordinate with them to make sure they're notified of who the person they should be –

Ms. Kaye: Okay. Can you leave your information with Joe so he can communicate that?

**6. September 17, 2008 Public Hearing on Council Resolution No. 08-55 regarding Administrative Enforcement.**

**7. Other agenda items for the September 17 meeting.**

Ms. Kaye: Then there's Council resolution for next month. We all have that in our package. We can read it and be prepared unless you have something you want to add to it now Joe?

Mr. Alueta: No, I'll try to do a summary, a mini-report on it.

Ms. Kaye: Next time?

Mr. Alueta: Yes.

Ms. Kaye: The other – I see the Mayor has signed. There were two things I wanted to follow up on housekeeping and that was having the exempted – the SMA exemption brought to us and the Mayor has signed off on that. That's in our package so that's there. And we, in December, submitted a recommendation to County Council regarding resolution

07-108 which was limiting big box stores on Maui. Remember we had that? That's been many months. I just wondered if next month you could bring us a status. If you know now, fine. But next month, let us know what the status of that recommendation.

Mr. Alueta: . . . (Inaudible.) . . .

Ms. Kaye: Pardon?

Mr. Alueta: It has not be scheduled before the Planning Committee. It's been sent up. As you know the majority of time that the Planning Committee has been taken up by the TVR's and the B&B bills.

Ms. Kaye: And you know once again, Lana`i can not function without them. We will say that on the record ever chance we get. Thank you.

Ms. de Jetley: Madame Chair, I have a request. Is it possible for staff to move us back into the Senior Center. It's not as if the Senior Center is on the verge of being torn down next month. This is a horrible location space wise, and it was so much more comfortable at the Senior Center.

Ms. Zigmond: Can I make one quick comment? Leilani, to put on the record, thank you so much for getting us our package so early. I'm sure it was a lot of work on your part, but many, many thanks!

Ms. Kaye: Okay, that's it for the regular agenda. Does anybody have anything they'd like to add?

Mr. Hardy: I know it's late, but it just occurred to me from Commissioner Rabaino your question about the three and the three. One thing that's unique on Lana`i is that you do have this Palawai Basin, and that's in coincidence with Commissioners de Jetley's question about reservoirs. One thing about the windward side, whatever from rainfall and so forth, a lot of those runs off so it doesn't get to the ground. But when it falls in the basin here, it stays in the basin. It doesn't run off. So even though it's wetter on that side, a lot of it runs off. And it's drier on this side. What does fall, doesn't run off. So that might be part of the reason why. Intuition would say it has to be wetter on the windward side, but I think that maybe part of the answer to your question.

## F. NEXT REGULAR MEETING DATE: SEPTEMBER 17, 2008

## G. ADJOURNMENT

Ms. Kaye: Okay. All right. Good work everybody. Thank you very much. See you next

month.

There being no further discussion brought forward to the Commission, the meeting was adjourned at approximately 9:40 p.m.

Respectfully transmitted by,

LEILANI A. RAMORAN
Secretary to Boards and Commissions I

**RECORD OF ATTENDANCE**

**PRESENT:**

Sally Kaye, Chair
Stanley Ruidas, Vice-Chair
Dwight Gamulo
Alberta de Jetley
Beverly Zigmond
Gerry Rabaino
Leticia Castillo
Darlene Endrina

**EXCUSED:**

Matthew Mano

**OTHERS:**

Joseph Alueta, Administrative Planning Officer