

# **WATER RESOURCES COMMITTEE**

**Council of the County of Maui**

## **MINUTES**

**August 19, 2015**

**Council Chamber, 8<sup>th</sup> Floor**

**CONVENE:** 9:05 a.m.

**PRESENT:** VOTING MEMBERS:  
Councilmember Gladys C. Baisa, Chair  
Councilmember Michael P. Victorino, Vice-Chair (in 9:13 a.m.)  
Councilmember Robert Carroll (out 10:50 a.m.)  
Councilmember Don Couch  
Councilmember Stacy Crivello  
Councilmember Mike White (in 9:20 a.m.; out 10:50 a.m.)

**EXCUSED:** VOTING MEMBER:  
Councilmember Elle Cochran

**STAFF:** Kimberley Willenbrink, Legislative Analyst  
Gregory Garneau, Legislative Attorney  
Kit Zulueta, Legislative Analyst  
Clarita Balala, Committee Secretary

Ella Alcon, Council Aide, Molokai Council Office (via telephone conference bridge)  
Denise Fernandez, Council Aide, Lanai Council Office (via telephone conference bridge)  
Dawn Lono, Council Aide, Hana Council Office (via telephone conference bridge)

**ADMIN.:** David Taylor, Director, Department of Water Supply  
Herbert Chang, Engineering Program Manager, Department of Water Supply  
Robert De Robles, Planner, Department of Water Supply  
Edward S. Kushi, Jr., First Deputy Corporation Counsel, Department of the Corporation Counsel

*Seated in the gallery:*

Paul Meyer, Deputy Director, Department of Water Supply  
Jase Miyabuchi, Civil Engineer, Department of Water Supply  
Dustin Timm, Civil Engineer, Department of Water Supply  
Kris McPhee, Civil Engineer, Department of Water Supply  
Glen Ueno, Development Services Administrator, Department of Public Works  
Kyle Ito, Supervising Plumbing Inspector, Department of Public Works

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**OTHERS:** Lawrence Carnicelli  
Hugh Starr  
Eve Hogan  
Rosemary Robbins  
David DeLeon, Government Affairs Director, Realtors Association  
of Maui  
Mercer "Chubby" Vicens  
Pamela Tumpap, President, Maui Chamber of Commerce  
Thomas Cook, Advisory Board Member, Construction Industry of  
Maui  
Chantal Lonergan, Secretary, Construction Industry of Maui  
(9) additional attendees

**PRESS:** *Akaku: Maui Community Television, Inc.*

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**ITEM-6(1): COMMITTEE'S PRIORITIES AND PROCEDURES;  
PRESENTATIONS FROM COUNTY ADMINISTRATIVE  
AGENCIES**

CHAIR BAISA: . . .*(gavel)*. . . Will the regular meeting of the Water Resources Committee please come to order. Today is August 19, 2015 and it's approximately five minutes after 9:00. I'm the Chair of the Water Resources Committee. My name is Gladys Baisa, and I regret that we're going to have to call this meeting to a recess, and if you could be patient. We're having some technical difficulties that we have to resolve before we can proceed with the meeting. So just be patient. Hang with us. We're going to try to get things going as soon as we can. Thank you for being here. The meeting is now in recess. . . .*(gavel)*. . .

**RECESS: 9:06 a.m.**

**RECONVENE: 9:13 a.m.**

CHAIR BAISA: . . .*(gavel)*. . . Will the meeting please come back to order. Thank you very much for that break. We had the opportunity to fix our technological difficulties, you know you love technology and you hate it because when it works it's wonderful and when it goes bad everything is just totally messed up. But I thought it was worth taking the time 'cause I really, really want you folks to see this presentation. My, again I introduced myself I have my Vice Chair this morning Mike Victorino.

VICE-CHAIR VICTORINO: Good morning, Madam Chair.

CHAIR BAISA: Good morning, Mr. Victorino. And we have Mr. Carroll our Member from East Maui.

COUNCILMEMBER CARROLL: Good morning, Chair.

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CHAIR BAISA: Good morning. Ms. Cochran from West Maui is excused. We have Don Couch from South Maui.

COUNCILMEMBER COUCH: Good morning, Chair.

CHAIR BAISA: Good morning. Ms. Crivello from Molokai.

COUNCILMEMBER CRIVELLO: Good morning, Chair.

CHAIR BAISA: And our Chair Mike White is excused for the moment, I hope he'll be joining us. Also with us we've got a platitude, a whole bunch of people, experts, tons and tons of experts with us today. But the chief expert of course is Dave Taylor our Director of Water Supply.

MR. TAYLOR: Good morning.

CHAIR BAISA: Good morning. We have Glenn Ueno who is the Development Services Administrator, wave your hand so everybody knows who you are, thank you. We also have Kyle Ito, the Supervising Plumbing Inspector, thank you. Ed Kushi is supposed to be nearby, he was here, I'm sure he'll be returning quickly, our First Deputy Corporation Counsel. We have Herb Chang the Engineering Program Manager for the Water Department and he's famous. And we also have a new addition to the Water Department that we're very happy to have with us today and that's Rob De Robles and he's the Planner VI with the Department of Water Supply, welcome. Very happy to have you with us today, and he'll be helping with the presentation. Also I have my Committee Staff, poor things they work really hard and I give them a bad time and I love them, Kimberly Willenbrink my Legislative Analyst.

MS. WILLENBRINK: Good morning, Chair.

CHAIR BAISA: Clarita Balala the Committee Secretary, and Greg Garneau, Legislative Attorney. Welcome, Staff.

MR. GARNEAU: Good morning.

CHAIR BAISA: Thank you for all your work. And out in the District Offices we have Dawn Lono in Hana, Denise Fernandez in Lanai, and Ella Alcon in Molokai. We're going to kind of slip over the testimony portion of this right now and we are going to get going with a presentation. We have a presentation today and it's my intention to explore options to make available more water for our Upcountry residents and to clarify possible misinformation related to some very important subjects that are brought up constantly in our meetings. And that is in regard to fixture counts, greywater reuse and water catchment tanks. I was very fortunate that somebody gave me a copy or e-mailed me a copy of a video and it's entitled, San Diego Graywater Options Getting a Closer Look and when I saw it I said, oh this is wonderful we need to hear about this. You know we're looking for ways to use greywater and I want you

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to see what other people are doing, we can learn so much from looking at other people, we don't have to invent the wheel when other people have already done it. So this is just an option, we're not asking you to vote for it or support it or anything but my intent today is really information. I want us all to be educated and I need it just as bad, remember I'm still fairly new to being the Chair of the Water Committee. I'm in my eighth month I can't believe it, it seems like eight days but, you know, we're all in the learning mode and we have a lot of people with us who know these things, and when we listen to them and they say oh no you can't do that we want to argue and say oh well they're just bureaucrats they don't care. But there is science and reasoning behind some of the decisions that they share with us, I think most of the decisions. So this is a learning day today and I'm really grateful, thank you very much for coming out to be with us, and this will be broadcast again on Akaku, it'll be rebroadcast so people who couldn't be here today will have the opportunity to see it. Last night we had a meeting up at the Kula Community Center in regards to the cesspool issue and we were very, very proud that we had the largest audience so far that has attended any of these talk stories that they're going through the State talking to people about the proposed rules that they're gonna make, they want rules, these are proposals that we're looking at right now. And it was very informal, the lady that came is the head of the whole business and she was very open, very friendly, allowed us all to talk and ask questions. So it was a really good dialogue about the issues and the proposed rules, and we have passed out the stuff that I got last night, it'll be, it's you can pick it up, up here if you don't already have it. And you go on the website and really look at the details of what they're proposing. But I want you to understand that those are just proposals and they are seriously out in the community trying to get information and when they have more information they gonna propose revised rules again and then they will have formal public hearings in all of the areas. So we will still have an opportunity to react to the proposed changes. We have done an excellent job here on Maui, I want to thank everybody, we got together, we stopped craziness that was gonna happen last year and now we have much better rules, they implemented a lot of the information that we asked for in the changes and so we do make a difference. I want you guys to know that coming to these meetings and listening is just not taking up space, you are making a difference, we do have a power to impact rules but it takes time and energy, so be patient and let's keep going and I'm gonna try to be with you. I have a few more months left in my efforts and so I want us to make a difference before we're done, so again thank you. And Kit Zulueta is going to be showing you the video so let's all pay attention, and after this is over then we're gonna have testimony and then the...do we want to do all of the presentations before testimony?

MS. WILLENBRINK: It's your call, Chair.

CHAIR BAISA: Yes.

GALLERY: Yes.

CHAIR BAISA: I think let's do all the presentations and then we'll do testimony, and then we can hear what you guys have to say. Does that sound good? Members, is that okay?

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COUNCILMEMBER CRIVELLO: Good. Yes.

CHAIR BAISA: I think we'll get the most bang out of the buck, you know. We don't have a whole lot of time so let's get something out of it. Okay. Let's begin. Ms. Zulueta?

***(Video presentation entitled "San Diego Graywater Options Getting a Closer Look" by Alison St. John, KPBS News)***

MS. ALISON ST. JOHN: The Smith family, they use to do all their laundry once a week, but not anymore.

MS. MARJERI SMITH: Now I have to be strategic so I do it like once every other day.

MS. ALISON ST. JOHN: That's because the Smiths now recycle their laundry water using a greywater system to irrigate their San Marcos backyard.

MS. MARJERI SMITH: It's a towel day.

MS. ALISON ST. JOHN: The Smiths greywater system is so simple their son Kingston has it down.

MR. KENSINGTON SMITH: There's a tube in the laundry, makes the pressured water through the tube all the way to our backyard and it goes in a little bucket and then it goes in the plants.

MS. ALISON ST. JOHN: Kingston's father, Herbie Smith estimates it costs \$250 to \$300 to put in the system. He had help from a company called H2OME. It involved laying 1 ½ inch PVC pipe from the laundry room through the garage.

MR. HERBIE SMITH: We followed the wall in the garage and then came out through the wall here.

MS. ALISON ST. JOHN: And out into the backyard where they've planted four new fruit trees.

MR. HERBIE SMITH: And so for each basin we had to dig a space or an area of about two feet by five feet and so about ten square feet that was about six to eight inches deep and it's full with mulch.

MS. ALISON ST. JOHN: The water has to drain through a layer of mulch. Laundry greywater has too many microorganisms to be used to sprinkle a lawn.

MR. HERBIE SMITH: I think the system in itself is very simple to implement. It doesn't require a lot of knowledge. As long as you know how to glue PVC together I think that you have a great chance of getting it right.

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- MS. ALISON ST. JOHN: The Smith's family of 4 do about 5 loads of laundry a week and their older top loading washing machine uses about 40 gallons of water.
- MR. HERBIE SMITH: So we're using roughly 200 gallons of water each week. Over the course of a year it's about over 10,000 gallons of water, you know, that would have otherwise just been put into the sewer system so now it's going into our landscape and it's being utilized to grow fruits. So I think that's empowering.
- MS. ALISON ST. JOHN: Installing a greywater system using the water from your laundry to water your yard could be as simple as a do-it-yourself project. But if you want to recycle water from anywhere else in your home it becomes a whole lot more complicated. In Rancho Penasquitos a new housing development is experimenting with a more ambitious greywater system.
- MS. HEATHER McPHERSON: We take water, residential water efficiency to a whole new level. Two out of every three gallons used in the home can get a new life by being recycled.
- MS. ALISON ST. JOHN: Heather McPherson is with Nexus eWater which has developed a nationally permitted water treatment system for your home.
- MS. HEATHER McPHERSON: So this is the 75-gallon collector that the greywater, the water from your washing machines, bathtubs and sinks come into. So that water is collected and sent to the NEXtreater in ten gallon batches, we take soapy water from your house, from your showers, your baths, your washing machine and we take it through this system and it comes out where it smells and looks like tap water.
- MS. ALISON ST. JOHN: The water goes through five different filter systems, McPherson says it would cost about \$15,000 to retrofit your home. To build it into a new home costs about \$10,000. Steve Ruffner of KB Homes says that's worth it to customers who don't want to risk losing their investment in landscaping during the drought.
- MR. STEVE RUFFNER: These customers, part of our pitch to them is you'll never have to stress about that because you're not using any potable water to water your landscaping, your landscaping is not gonna die in a drought.
- MS. ALISON ST. JOHN: Ruffner say's this is the first development where every house comes standard with a greywater system.
- MR. STEVE RUFFNER: And I think in the next 12 months we're gonna really have this down so that we can roll it out very similar to what we did with solar.
- MS. ALISON ST. JOHN: Complex greywater systems like this don't pencil out the same way solar does, at least not yet. You can install a less comprehensive system for closer to \$1,000 but it would take years to recoup the cost with savings on your water bill. But say the Smiths it's not so much about saving money, it's about making the most of a dwindling resource.

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MR. HERBIE SMITH: So for me it wasn't, the greywater system wasn't about saving money it was more about utilizing the water to the fullest extent possible and growing food in the process.

MS. MARJERI SMITH: Now I don't feel guilty doing laundry, I do it and I'm excited that it's watering the trees that we will eventually have fruit on.

MS. ALISON ST. JOHN: Alison St. John, KPBS News.

CHAIR BAISA: Okay. I think that gives you a lot of food for thought about the idea of greywater. You know I've been interested in greywater before I got to the Council and I've had a horrible time trying to loosen up so that we can do some of this but we're seeing the technology. And we'll talk about this a little bit more later. So now we're going to proceed with the presentation from the Department and Mr. Robles, De Robles will be helping us. Go right ahead. Oh okay Herb first. No? Okay. Go ahead, Herb.

MR. CHANG: Good morning, audience.

UNIDENTIFIED SPEAKER: Good morning.

MR. CHANG: Good morning, Councilmembers, Chair.

CHAIR BAISA: Before we proceed, Herb, one second, I'd like to note the presence of Chair White. Thank you.

COUNCILMEMBER WHITE: Good morning, Chair.

CHAIR BAISA: Go ahead, Herb.

MR. CHANG: Okay. I'm Herb Chang with the County of Maui Water Department, Engineering Program Manager. I'll be, there'll be three parts to this presentation PowerPoint, I'll be doing the first and third and Robert's going to be doing the second. So let's start. Okay, this is a PowerPoint on, okay so these are three parts, the first one will be the water meter capacity and the water fixtures. Second one will be greywater systems, and third the rain water catchment system. Okay. So let's start with the water meter capacity and water fixtures.

CHAIR BAISA: By the way, excuse me. Everybody should have a form that we passed out this is the form you fill out if you want the, about the fixtures. Thank you, Herb.

MR. CHANG: Okay. Let's talk first about water meter capacity. Most of you may know already but I'm just gonna go over it anyway. What water meters do is they record the amount of water that flows through it which is, you know, going to the customer's house or irrigation or whatever it is you're using. And so it records the flow and it's downloaded, right now at every month we take the measurements, so we take the

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difference between monthly measures and that way we can determine how much water had flowed through the meter and then we would send bills based on that water consumption. Meter sizes, we vary from the smallest which is like residential is a 5/8-inch meters and you got your 3/4 inch, 1 inch, 2 inch all the way up to 12 inch. But 12 inch, 8 inch they're kinda rare, there's not too many commercial, big projects that need that type of meter. Generically residential homes they have 5/8-inch meters, sometimes you get 3/4 inch. So with each meter size you have a maximum size, excuse me, maximum flow that's allowable which goes into the last item which is the American Water Works Association. They are the national association where they as far as water meters they cover everything for water meters on how you make 'em, what kind of materials you can use, the size of the connection fittings. For each size of meters you got different capacities so everything as far as water meters, they control, they have, they developed national standards. So all water meters that we use are AWWA approved. So they have sizes, they have capacities that they must be designed to, so you have 5/8, you know, going back 5/8, 3/4 inch. You have your generic standard water flow capacities. This is pretty much what we're talking about, so we have on the left column the meter size 5/8 all the way to 4 inch. We didn't include the bigger meters because, you know, they're not used very often. So in the middle column you have the flow capacity for each meter size, for example, 5/8-inch meters you have a maximum flow of 20 gallons a minute, 3/4 inch meters 30. And on the right column you have what we call fixture units. These fixture units were, are used in part of the formula that the Uniform Plumbing Code has developed. So who is the Uniform Plumbing Codes? They, consist of a group of professionals, contractors, volunteers and so you can have like plumbers, you have mechanical engineers, you have designers, you have people who manufacture the materials, pipes. So they all get together and every three years they develop and what we call a Uniform Plumbing Code updates. So to describe how this table works, when you have a maximum flow like the 5/8 again you have 20 gallons a minute, have 31 fixture units so these are kind of like the givens, you have to work with if say you have a property with a 5/8-inch meter you're kinda stuck with these capacities. So when one comes in for a Building Permit for like a dwelling. We have to make sure that whatever's being built falls within this flow range. One of the reasons why is we do not like to have a situation where for example a property with a 5/8-inch meter and they have built buildings and structures that exceed 20 gallons a minute because what can happen is that our water meters it has a mechanical device in it that spins as the water flows through it, with excessive flow you can damage the meter, it actually can fail. And also the accuracy of the reading of what the consumer is using, the, as you exceed the capacity of the meter we have a accuracy problem where we're not recording all the flow that's being used. So anyway, that's one of the reasons why we like to stick with this flow capacity and fixture units. Hopefully everybody's following. Let's see, so what are fixture counts? You take example of like a dwelling you can have multiple fixtures, like kitchen sinks, toilets, lavatories, washing machines, dishwashers, and as we all know each of these fixtures don't use the same amount of water when you're opening it. For example a washing machine may be pretty much open full blast versus a lavatory in a bathroom you're not using that much water at the moment. So what this Uniform Plumbing Code does is they created a formula where for each type of fixtures whether it's a washing machine or a hose bib or whatever, it'll assign a



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value which they call fixture units. And they created it like a probability curve where you can start off with a few fixtures or on the extreme you can have a whole bunch of fixtures like if you have like five houses on a property. So what happens is the probability say if you have a minimum amount, number of fixtures on a property versus you have a whole bunch of fixtures, the probability of all of them turning on the same time is not as much when you have a whole bunch versus when you have a little. 'Cause say you have like three fixtures, the probability of the three fixtures running at the same time is, you know, probably greater than if you have a 100 fixtures 'cause there's not that many people. So the curve is set up where the water demand is greater with the beginning lower number of fixtures and as you increase the number of fixtures, you know, there's a less probability. So I mean that's how the probability curve works on this Uniform Plumbing Code. So we use that to determine our, when Building Permits come in when we try to work with the customer to see how much more bathrooms you could fit, put in or if they could build an ohana, this is the formula that we use to determine whether the meter has capacity or not. Sorry. This is the form I believe you have passed out to you. This is the water meter sizing worksheet, this is a residential worksheet, we have a commercial one, it's a little different. And our Building Permit section is, they're updating this so we're gonna have another update on this with a lot more information and probably a little helpful for the people who really don't know how to use it. But again the permit section they're always available to answer questions so if you have problems filling in this form. So if you look at the form you have like three main columns in the upper half. You have, like on the left you have existing structure, and then the middle one was also existing structure but you have, if the existing structure was built before 1992 this probably have, you have some non-low-flow fixtures and going back to that curve that we talked about in the previous slide. The low flow, non-low-flow fixtures as you know it doesn't, it's not as conservation designed so the lower, the older fixtures you can get a lot greater flow, so your, so as far as the curve as far as probability and the amount of water used when you have a lot of low fixtures you're probably not gonna be able to put as many fixtures on the property. But you always have the option of changing a non-low flow to low flow that way you can get more fixtures and you can build more. So basically you fill in all the number of fixtures you have like kitchen sinks, laundry trays, bathtubs. So whatever you have you just put the number and then there's a, then we multiply it by the fixture units, then on the right hand column we totalize it all. And it goes back to like if you have a 5/8-inch meter you can have a maximum of 31 fixture units. So in this next slide shows you the values of the fixture units. So if you take the top one like you have a bathtub shower combo you have two columns, the one on the left is like 2.0 that's for the non-low flow, it's the older fixtures, if you notice on the right side you have the low-flow fixture value which is less so obviously if you have more low-flow fixtures you can have, you'll be able to have more fixtures on the property. So that's that on that. So these are some examples. If you had a 5/8-inch meter again you're limited to 31 fixture units. So what you could build on, assuming there's no irrigation and everything's low-flow fixtures you could have on a 5/8-inch meter you have 31 fixture units, you could build one main house and one cottage and it kind of lists what kind of fixtures you can have. So like the main house you can have kitchens, kitchen sink, you can also a dishwasher, laundry machine, washing machine, and three full baths. But in the

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cottage it's pretty skimpy where you just have one kitchen sink, one full bath and the hose bib so it's pretty minimal on a 5/8. Again this is with, you don't, if you don't have irrigation cause irrigation cuts into your capacity. So it could be as much as 20 percent of your flow, like 5 GPM. So it does chew up your meter capacity. The next slide is what you could build if you had a 3/4-inch meter which is equivalent to 53 fixture units. So you could build actually two full-size houses each with the same amount of fixtures or, that we had in the previous example. You can also build an ohana but you could stick in a clothes washing machine in that one. Again, no irrigation and all low-flow fixtures. So in real life when people come in for building permits sometimes they have a mixture of low-flow and non-low-flow devices and irrigation so staff here is very helpful, they work with the customers and sometimes if they need to retrofit or meaning they replace one of their non-low flow with low flow then sometimes they'll, you know, they'll make it work. Otherwise sometimes it doesn't so that's unfortunate but that's the situation sometimes. Okay that's part one and Robert's gonna do part two.

CHAIR BAISA: Thank you, Mr. Chang. Members, try and jot your questions down because we'll be dealing with this when we're all done. Please proceed.

MR. DE ROBLES: Good morning, Madam Chair and Councilmembers. Today...my name is Robert De Robles I'm a Planner VI with the Department of Water Supply. Today I'm gonna be talking about what greywater systems, the basics of it at least. On the agenda would be greywater systems and its applications, system components, basic greywater system diagrams I'm going to provide, estimated costs, basic design requirements, basic Uniform Plumbing Code and rules, some things that apply to greywater systems and the benefits and risks. And then we'll reserve some questions for, some time for some questions and answers. So what are greywater systems? Well greywater systems diverts the water used from your bathrooms, bathroom sinks, showers and also from your washing machines and redistributes it back to, for irrigation purposes. These sources are what households, you know, when you think about consumption you're consuming between 50 to 80 percent of your total potable water usage from the bathroom and laundry. And for those of you who have irrigation you're talking about the exact opposite, almost 50 to 80 percent goes to irrigation. And most of that irrigation actually just needs greywater. So applications, we're looking at single-use residential, multi-family mixed-use and also commercial. And I'll explain a little bit what's happening here in Hawaii, why some of the other ones, the multi-family, mixed-use and commercial are not really being applied yet here. So, the system components, a greywater system you're talking about distribution and collection of piping, valves and connectors. You have a containment tank, a more simple design just includes a filtration, basic filtration for debris and so on, but more complex systems will have a neutralization tank as well. And then you also have water pumps for more complex systems, those are large branch systems which I'll explain. So here's the first diagram, as you can see it's only subterranean or subsurface application. You can see how it's diverted from the house, comes down the pipe and into a greywater holding tank which has a basic effluent screen. So the basic one would just have that screen and a more advance would have, you know, maybe a neutralization tank. And as you can see it has to be a certain depth under the

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ground, most people have a misconception about greywater, they think that you can just use greywater and spray it. You're not allowed to aerate greywater, so that's a lot of misnomer that's going on, but as you can see on the right side how deep in that picture and diagram you can see how deep the pipe would be, it would be perforated piping. And there are rules also on the dimensions of the system as per UPC code. Okay. So we have here the second diagram here a branch system which is from the bathroom and laundry and as you can see you have your laundry machine, and you have your greywater, your sinks, your bathtub and showers. So this is what really constitutes most of the basic or more advance branch systems, greywater systems. And it comes down, it goes into a filter and the storage tank, but when you're talking about filtration like I said before, if there's a possibility that you're gonna, you think that you're gonna have water being held in the containment tank for more than 24 hours you would probably need a neutralization tank because it's not, you're not supposed to hold greywater for more than 24 hours or you stand a chance of it becoming septic. So here's a more detailed branched greywater system from the bathroom and as you can see there's a difference between greywater and blackwater, that's another misconception a lot of people have, there's a difference. Basically greywater does have some biological and some chemical content in it from your showering, and your, you know, from your sinks but it differs in quantities so you're talking about blackwater from your toilets, that's a high, high percentage so it's considered blackwater. And so but you can see here how the greywater systems actually connected in case, to the sewage in case there's a backup or some kind of event where you need to switch to let the water run into the sewage, and it has a valve, a diverter valve there. So what are the estimated costs? I mean here we have, we're looking at four different types of greywater systems, just the basic ones laundry to landscape which are, which will usually cover a small area. These are components and parts you could buy from your local hardware store, and as you saw from the video we're talking about, you know, 200 to 750 depending on the house. And obviously there's direct costs and there's also indirect costs so when you're talking about, when they're talking about pricing they're not really mentioning the costs for labor and indirect costs for ongoing maintenance of that system. So with installation you're looking at more like 450 to 2,000 depending on if you're gonna hire a landscape architect or somebody to help you in the back. And then you're talking about for plumbing, maybe between \$90 to \$125 maybe per hour for a plumber to come in to check. And but for basic, for the basic system there's nothing in the guideline that will prevent you from doing that. A lot of states allow that but if you have a larger system, you know, DWS and DOH might want to be involved in that kind of process just to make sure that there's no contamination. Also the second one here, branched systems from laundry and bathrooms, these are probably what most of you might use. You could buy kits for that or if you know anything about plumbing you could probably do it yourself, but that will range between a 1,000 to about 8,000 for this kind of system and with installation you're looking at maybe 2,000 to 14,000-plus. Again a lot of these systems really depends on your irrigation needs and, you know, your house, the property, so all, when a contractor finally come out to install this you could imagine the cost could rise dramatically. So you have to do some research ahead of time and see what your irrigation needs are. And then for the pump system, for more complex systems, these are larger homes where you want to utilize more

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water from different source, bathrooms, more than one bathroom for example. That will cost between \$1,500 to \$10,000 and with installation again 2,500 to 15,000-plus. And then when you have a large property some people might have, I don't know, large landscaping, you might be looking at, you know, pumps you have to install to get the water out of your tank and distribute the water, greywater to your irrigation needs. That could range between 2,000 to 30,000 and of course with installation another \$3,500 to \$35,000, and again a lot of the costs will come from hiring laborers and contractors and landscape architects. I'm sure a lot of you don't want to do your own digging back there if you have a large property. So as you can see branched systems can vary greatly with complex designs costing much more than a basic, costing much more than a basic laundry-to-landscape system. So what are the basic design requirements? Okay we're looking at a basic design is subject to the parameters for irrigation needs, that's another thing a lot of people think that they can just install a greywater system. That's usually not the case, you have to really look at the irrigation needs of your property because greywater is not allowed to be pooled, so if your consumption is really high and you have a really small irrigation need you can imagine that you're gonna have to somehow get rid of that greywater into your irrigation for irrigation purposes and not let it sit for more than 24 hours in your tank without, you know, some kind of special filtration process. The video you saw earlier had an advanced, it was pretty advanced but you could also see how complex it could be. So if you bought a \$13,000-\$15,000 system you still have to maintain that and you stand a chance of it breaking down and so, you know, your choice as a simple system would be great but. And then you have, you have to also comply with obviously UPC or the Uniform Plumbing Code and follow guidelines from DOH, and the US Environmental Protection Agency also has, they have their own manuals to help you, guide you through the process of how a greywater system, basic greywater system should be. And then also you have our local jurisdiction authorities who will, the State of Hawaii, for example, have amended the Uniform Plumbing Code for the State of Hawaii so a lot of jurisdictions will do that. So basic UPC rules for Hawaii that I was just saying, single-use residential application only, now there are some instances on the island I don't know about all of them but at least like, for example, commercial you have the Hyatt Regency that recently installed a greywater system but they, from my understanding they have a Special Use Permit for that kind of thing. So everybody else using a greywater system, you know, it's basically just for single-use residential application only. It has to be underground, subterranean irrigation only, not connected to a potable water system which means it has to be a standalone system but it could be connected to sewer. A survey of the property and location for the system is required, so before you go out and start spending money, do a survey, hire contractors to go out and get an estimate for how much it may cost for materials and supplies. Soil and maximum absorption data for designing, and that's kind of important, I'll show you a little bit later on the formula how to do that. And it cannot be in a geographically sensitive area so that's some, another thing to consider. Scaled and dimensioned drawings with specifications in the plot plan, so your designs have to be submitted first if it's a more complex system, should be submitted for review and DOH will probably will also want to take a look at it. And then you have limitations to irrigation dimensions, so again you have the design itself and then you also have to take into consideration the constraints, distances to certain buildings, you can't be too

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close for example to vegetation that, like vegetables and plants that you eat. You know these irrigation systems can't really come in contact with those kind of, with greywater. So a lot of people think you could use greywater for, you know, growing what you eat but it's not really recommended because we don't know the full contents of the greywater and it's, you know, we're basically using the ground to, as a biological, natural biological process to clean the water, not to feed the vegetables and plants that you eat. So it might be a consideration. Also construction and alteration must be permitted, so any alteration, any construction again has to be permitted. So what are the benefits and the risks? Well, the benefits, less water reclamation costs, natural biological treatment is very effective, consumers help conserve water and save money, simple systems are easy to apply and maintain, and these are the simple systems which, from laundry to irrigation. This is not to say that, you know, more complex systems will be, will require more maintenance and costs. And then you have the intermediate water conservation upon implementation. So that's not necessarily saying that it's gonna be, you're gonna save, you're gonna recapture your costs to implement it right away but you certainly, if you have a larger system you could stand a chance of reducing the payback horizon time. And the risks, you're talking about contamination, and that's why the DOH and DWS would be involved in a more complex system. Collected water becomes septic after 24 hours as I was mentioning before, and higher than expected maintenance. So you do, you have to remember that your system is subterranean so it could become clogged and you might have to go down there and do more maintenance than you anticipate, and of course user misuse. So if you choose to do it yourself sometimes maybe the system is not as robust as you would think it is and you might or people start putting things into the system that's not supposed to be going in there even if it's from the bathroom. So here's, the size of the greywater system I was mentioning before, it really depends on irrigation needs and also the landscape area. So when you look at this formula you have LA stands for landscaped area and square footage, GW estimated greywater produced per gallon per week, and then ET which is the evapotranspiration inches per week, and then PF plant factor, based on climate and type of plants, and of course you have the conversion factor. This looks really complicated but really it's not, what it is, is the PF, for example, is when you do your analysis for your, the type soil and geography you have on your property, you would have, there's a plant factor of what kind of plants you have that will require so much water and also there's a conversion factor. The DOH has I believe a table that you could use to see how much this ratio would change it, right now it's .62 just as a general term, a general number. So you get by dividing the estimated greywater produced gallons per week by the other factors, GW, ET and PF, and .62, you should be able to get your landscape area which you require for that area. Now that will determine the size of your system and then from there you could actually start doing a materials and supplies analysis and how much it would cost. So a lot of people just want to know a value or a cost for a greywater system, it really depends on your own property. So that's why it's really hard to give a ballpark, you know, a figure just to anybody about how much it would be.

CHAIR BAISA: Thank you.

MR. DE ROBLES: Thank you.

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CHAIR BAISA: Okay, Mr. Chang?

MR. CHANG: Okay. Part 3, we're on rainwater catchment systems. Just what we're gonna go through, we're gonna go through like a typical water, rain catchment system, applicable Maui County codes and regulations. Then how rain catchment systems and subdivisions, you know, how do they work together, and also rainwater catchment and Building Permit applications, and then finally backflow prevention. You should be aware that rain catchment systems is not regulated by the Department, so we, the Department doesn't have standards or design standards or construction standards, it's pretty much up to the owner. So we don't, the bottom line is we don't review these catchment systems. Here's a typical installation, you have your house, roof, and the rain falls on the roof and it gets collected in the gutters and piped down to your rainwater catchment tank, and generally you need to have a pump to get the water to your house fixtures so there's a little bit of mechanics involved too. There's all types of systems but this is just one generic one. Applicable Maui County codes and regulations. The Maui County codes we have in the subdivision section, we have our section where we cover private water systems and catchments are considered private water. And we, basically what it says is subdivision water systems codes, the Water Department doesn't have any jurisdiction, we do not review or approve private water systems so it's pretty much hands off as far as the Water Department. The next code is the water service section of the Code and that covers the backflow prevention. We'll get into that a little bit later as far as what the backflow does. And similarly for our rules and regs we have cross-connections and backflow prevention requirements. Okay. As far as subdivisions and rain catchment systems we have three main types, one is the subdivision served by the County system which is no catchment, second is a subdivision that is going to be served entirely by a catchment system, and the third is like a mixture, a combination. So again this relates to only subdivisions and catchments and how the Department processes these types of projects. So the subdivisions that's served by the County Water system it's, you know, have to comply with our rules and regs, our County codes as far as fire protection, adequate water capacity for domestic irrigations, so it's all in our codes, subdividers need to comply with that. For subdivisions served entirely by catchment systems, we kinda touched about it earlier where the Water Department has no jurisdiction, so if you have a subdivision that has totally private, not, no connections at all to the Water Department. The Department of Health sometimes they get their, they are sometimes reviewing it based on the number of people served, number of meters. So the third type is where we have the kinda mixture combination. We have a few of these not too much, they come, you know, once in a while. Where in the case of Upcountry where water meters are not available, in a situation when a subdivision they want to do like a three-lot subdivision with one existing meter, you can do a, these combination with, you can use an existing meter to serve your one lot and if you're doing like a three-lot subdivision you could use your catchment water for the other two lots. And absolutely there cannot be any connections between the two and you're not supposed to use the County water for any of the other lots that's supposed to be on the catchment system at any time even though if there's a drought there's, you're not allowed because it will stress our system. When there's no rain our reservoirs are empty or very low and here

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we have these subdivisions that claim that they're gonna go catchment and they're out of water too so where are we gonna get water, is kind of obvious. But anyway they're not supposed to connect. Let's see, okay, we went through that. Same similar catch, private systems, again we not reviewing by the Department. We just finished the semiprivate system which is the combination. Okay. Now let's get into rainwater catchment and Building Permit applications. Again there is three basic types similar to the subdivisions where like first, the first one as far as Building Permit applications you could be totally served by the County water system. The second one would be like no County water, that's strictly with a catchment system. And the third would be a combination of the two, both County and catchment. So the first one, the Building Permit application with, served by the water...County, it kinda goes back to our water meter capacity, fixture units, that process that we went through in the first part of this presentation where we check the fixture units and you have to, you know, the, whatever you're building and whatever water meter fixtures you have it has to be within the capacity of the water meter that's currently serving the property. The second type where we have a private system, if it's totally private for the property, there's no water meter the Water Department does not review the permit, so again this is similar to subdivisions we're pretty much hands off. The third one is a combination where building permits are, you have like a County water system and you also have a catchment system, the key point on this one is even though you do have a private catchment system it's kinda similar to the subdivision situation where you have some lots fed off the private system and one lot served by the public meter. When the weather gets dry, we're in drought conditions, reservoirs are low and these private water system, catchment system, you know, no water. We have the same problems with, you know, we got houses that are served by this catchment system and there's no water, so what do they do? They're gonna connect to the water meter obviously yeah. So what we do in this situation is because we are in the permit process review we make sure that whatever fixtures are on the property in all the structures can be served by the existing water meter 'cause we know the water meter is gonna be backed up, backing up the catchment. So, there's, that's the usual complaint that we hear from customers that, you know, they want to do a catchment system but we still require them to have the capacity, to have our meter provide service to the catchment structures. So anyway that's the big issue with that combination type permits. Okay I think we went through all that and...okay, backflow prevention, what, this is required by Code. Whenever there's a situation on properties where you can have water from the, within the structures that there's a possibility of it flowing back into our water mains we require a backflow prevention device, and it's just a mechanical device for like a residential home and would cost you couple hundred bucks, maybe \$200-\$300 to install. And these catchment systems because there is potential for backflow into our system, in case like somebody hits a hydrant and all the water in the property may be actually sucked into the water main because our main is like, you know, flowing out 'cause there's a big, big draw and there's gonna be getting as much water out of the pipe before it drains and it may possibly suck in the water from private properties. So anyway so the backflow preventers is definitely required especially for properties with catchment systems. So that's that, and that's the end of our presentation. Thank you.

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CHAIR BAISA: Thank you very much, Mr. Chang. Members and audience, I know that's a tremendous amount of information that was just thrown at you and I hope that many of you have the handout that we received and if you don't we'll try to get a copy for you. But right now we're going to proceed with public testimony and then we'll get into the discussion and questions and answers so I hope everybody will stay with us. We have one item on the agenda today and that's Water-6 and it is Committee Priorities and Procedures; Presentations from County Administrative Agencies. And we're talking about all these lovely things that we're talking about today. So testimony of course will be limited to the item on our agenda today and if you want to testify please sign up at the desk or if you're in the District Offices please sign up there. Testimony is limited to three minutes and upon request you get an extra minute. I think we all know how this works so I won't go into any details. We ask you to be courteous and when your, it's time to stop if you would please stop that would be nice. We've established a connection to the District Offices and to be fair we will rotate through the sites. Let's start with the Hana Office, Dawn Lono, do you have anyone wishing to testify?

MS. LONO: Good morning, Chair, this is Dawn Lono at the Hana Office and there is no one waiting to testify.

CHAIR BAISA: Thank you very much. The Lanai Office, Denise Fernandez, do you have anyone wishing to testify?

MS. FERNANDEZ: Good morning, Chair. This is Denise Fernandez on Lanai and there is no one waiting to testify.

CHAIR BAISA: Thanks Denise. In the Molokai Office, Ella Alcon, do you have anyone wishing to testify?

MS. ALCON: Good morning, Chair. This is Ella Alcon on Molokai and there is no one here waiting to testify.

CHAIR BAISA: Thank you very much, Ella. Ms. Willenbrink, can we start with the testifiers in the audience?

MS. WILLENBRINK: Yes. Thank you, Chair. Our first testifier to sign up is Lawrence Carnicelli, followed by Hugh Starr.

**. . .BEGIN PUBLIC TESTIMONY. . .**

CHAIR BAISA: Good morning. We have to stop meeting like this.

MR. CARNICELLI: Good morning Madam Chair. Thank you for being there last night, Department of Health that was great. Your presence there and the questions you asked and things that you brought up really helped so thank you.



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CHAIR BAISA: Thank you.

MR. CARNICELLI: Also just full disclosure I am the chairman of the Hawaii Association of Realtors Government Affairs Committee, it's not a paid position and it's an appointed volunteer position but I do hold that but it's not paid so full disclosure. I kind of look at this, what you're bringing up, Madam Chair, from 50,000 feet it seems as though the Water Department had kind of almost become the de facto Planning Department. When you look at water meters, "Show Me the Water" Bill, fixture counts, you know, we talk all the time about affordable housing, you and I personally talked about affordable housing and we talked about like the restrictions of what's getting in the way of that and to a certain extent the Water Department is, in many ways without pointing fingers but it's just kinda just part of the reality of our situation. And I think what you're bringing in is kind of empowering people. You know oftentimes we write legislation which is restrictive, it's like we can't do this, you can't do that but this seems to be more like okay let's empower people, if we can get fixture counts out of the way we can get rid of "Show Me the Water" or, you know, do something about the Upcountry water meter situation, that would be fantastic, you know, because it now would empower people. I appreciate you letting us see the presentation first 'cause that was educational. The thing that I walked away from with, the fixture count one was the most interesting to me was it seemed like okay we have say a 5/8-inch water meter that's got 20,000 gallons of flow and our concern is, that it's gonna go over that and we can't read what it is that we can charge them. Well that seems ridiculous to limit what people can and can't do in their houses just because we might not be able to meter the flow. So that to me just seems like a little bit counterintuitive. And the other part that I guess I question and I don't know I'm oftentimes wrong is I believe that if you get a new Building Permit you don't have to do a fixture count. So we can go build some big huge house with 27 bathrooms and 13 wet bars and that doesn't get a fixture count but yet if I want to add a bathroom to my existing house in Pukalani then I suddenly have to do a fixture count, so I don't know if that's true or not but it just seems like it's a little bit counterintuitive. And the greywater issue we're all watering our bananas anyways, this is like, this is something that it's, you know, we're not reinventing the wheel, it's done in many different, you know, municipalities all over the country, let's just copy somebody else, let's poach what they do, insert it into ours and be done with it. So thank you, Madam Chair, I appreciate it.

CHAIR BAISA: Thank you very much. Members --

VICE-CHAIR VICTORINO: Madam Chair?

CHAIR BAISA: --any need to clarify the testimony? Mr. Victorino?

VICE-CHAIR VICTORINO: Thank you. And thank you for being here and I thank you for your manao. I think yes, government has at times been very restrictive and has held back affordable housing, no disagreement, and you cannot blame the Water Department for some of the things like "Show Me the Water" because it came out of this Council. Okay. So --

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MR. CARNICELLI: Agreed.

VICE-CHAIR VICTORINO: --you know, the, you know, so you gotta lay the blame where it needs to be laid. So let's...but when I was doing the board, Department of Water Supply's application there is for a new installations with this permit so I think your, may be wrong because I think anything new has to have a fixture count, any new residential development or commercial.

MR. CARNICELLI: And I qualified it by saying I might be wrong, Mr. Victorino.

VICE-CHAIR VICTORINO: Yeah. And, you know...

MR. CARNICELLI: I believe that's a new permit for like say if I'm gonna go do an addition on to my house, that's a new permit too.

VICE-CHAIR VICTORINO: Yeah. That's a new permit too. Yes, I wanna...the other question I have for you is really this. Do you feel that, you were talking about greywater and that, you know, we use it now, many of us would like to use it now but we cannot, you know, that's not something we can. When I grew up we used to have it come right out of grandma's washing and right to, and, you know, have it right to the banana patches, mango trees and everything else. But you're in favor of this greywater so long as it, you know, like has been proposed so with as much, as little regulation as possible but maintaining the safety and health of the general public?

MR. CARNICELLI: I'm in favor of, you see I'm not an engineer, that's what these guys get paid a lot of money to do that and they're way smarter than I am. I just say is this already exists in other municipalities, let's go to what is it..

VICE-CHAIR VICTORINO: San Diego.

MR. CARNICELLI: Right. Go to San Diego, there's a, what's the website muni-something.com --

VICE-CHAIR VICTORINO: Right.

MR. CARNICELLI: --where you can just go take their stuff and poach it and put it into ours, so that's what I'm saying is, you know, whether it's minimal, whether it's maximum, that's their thing, I just think that we need to start doing it. You start recognizing okay, you know, before we have an issue let's be proactive and that's what I love the fact that you guys are doing that now is you're saying, hey, listen let's go ahead and empower people and be proactive about it.

VICE-CHAIR VICTORINO: And the last thing I guess is in this area is the cost factor. As you saw it can range very widely.

MR. CARNICELLI: Right.

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VICE-CHAIR VICTORINO: And yeah there's people who can afford that but there's many more of us who cannot. Especially...

MR. CARNICELLI: I'm one of those people, I can't afford it.

VICE-CHAIR VICTORINO: Yeah. Okay so you know exactly where I'm coming from. So that, my other concern is the economic impact, you know, I'd like to do it and I think we want people to do it but we've got to make it affordable for them to do it, to get the kind of results that we're looking at. 'Cause even PV many people cannot put PV because they cannot afford it. They'd like to save electricity but they cannot afford it.

MR. CARNICELLI: Right.

VICE-CHAIR VICTORINO: So again the reality is we can, the reality is the impact financially and how many of us really can afford to do it. Yeah.

MR. CARNICELLI: I agree.

VICE-CHAIR VICTORINO: Thank you, but thank you for your mana'o today. Thank you. Thank you, Madam Chair.

CHAIR BAISA: Thank you, Mr. Victorino. Anybody else? Thank you very much. Ms. Willenbrink?

MS. WILLENBRINK: Thank you, Chair. Hugh Starr, followed by Eve Hogan.

CHAIR BAISA: Good morning.

MR. STARR: Good morning, Madam Chair, Members of the Council. My name is Hugh Starr from Makawao. I want to thank you first for putting this on, you know, for discussion, I think all three of these items are worthy of some sharing and exploration, so it's very timely and so thanks very much for that, it's a real opportunity. Just in general I'm in support of exploring greywater, exploring anything we can do with rainfall catchment and making, you know, integrating it into our system in whatever ways work, I'm not an engineer. The thrust of my comments this morning would be centered around fixture units, the methodology that we're using right now, and I again I'm not an engineer and I think I have a yeoman's knowledge of the theory of probability, the probability curve, the hunter's curve that is used as the standard for determining fixture units and fixture flows. I think it's worthy of some discussion, you know, the actual numbers that we're using it's interesting that Mr. Chang mentioned that Honolulu Board of Water Supply has actually amended the UPC standards which I didn't realize. It's very hard as a layperson to access most of this stuff you have to, you know, actually subscribe or to get that data online is really hard to do, so I'd be real curious to know what those amendments actually were with respect to fixture units. I'm just assuming, you know, the national standard or the one's you or the ones that are posted at the Board of Water Supply, the Department of Water Supply now. But the hunter curve, the probability curve is 70 years old as I understand it. It

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was created in the 1940s, it was designed principally to address the probability of flows in not only single-family residences but in high-rise buildings, you know, multi-family high-rise buildings so it's a kind of a catchall. Whenever we have a catchall like that, that makes me wonder if there aren't possibly some ways we could tweak it a little bit. It may be more nuance than a one-size-fits-all, but I don't really know. So I think this is worthy of some discussion and how that discussion could happen I don't really know but I'm in, willing to be involved and engaged in that conversation. We have a lot of history as I understand it, the Department has kept track of, I think, it's been awhile since I've looked at the annual reports but they do track the average daily consumption of our various regions, you know, say Wailea versus Kahului, so we do have good data on the actual water consumption in the different regions of the island or in the County. And I think this is, could be valuable in our conversation of exploring some ways that we might be able to tweak the system that might benefit say under certain circumstances providing for additional housing in the interest of affordable housing. And I don't really know, I don't have any answers, just comments. And I guess, maybe I'll leave it at that but I'm, again I thank you very much for bringing this up for discussion and I hope we can continue the conversation maybe on a more informal basis in some way. So thank you.

CHAIR BAISA: Thank you very much, Mr. Starr. Is there any need to clarify the testimony? Chair would just like to share some information and that is that the other 3 counties do not have fixture counts; however, Honolulu only uses 3/4 inch meters.

MR. STARR: Oh I didn't know that.

CHAIR BAISA: So we're gonna be delving into this a little bit more, this was kind of an opportunity to make everybody understand what we're using and why we're doing it but I fully intend to pursue this.

MR. STARR: Great.

CHAIR BAISA: Because I keep hearing it in testimony over and over and over and I think it's important that we look at every possible way to make the best use of the water we have and also to help with this housing mess that we're in.

MR. STARR: Yes. If I may?

CHAIR BAISA: Yes.

MR. STARR: On that point, this is exactly it, you know, the system is, we can work with this system, I think that it tailors to Maui County and looking at our particular needs and we do have needs beyond just the spreadsheet that calculates fixture units it has a big impact on a lot of other aspects. But it was like the Director and I had a very brief conversation coming in here about logistics, you know, every time you change, make a proposals or change something like this it involves so many agencies and so many different departments. But I do think that it's worthy of the conversation and I hope we can continue it.

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CHAIR BAISA: Thank you very much, we fully intend to pursue this. Thank you

MR. STARR: Thank you.

CHAIR BAISA: Okay. Ms. Willenbrink?

MS. WILLENBRINK: Eve Hogan, followed by Rosemary Robbins.

MS. HOGAN: Good morning. My name is Eve Hogan and I'm the owner of the Sacred Garden in Makawao as well as a member of the Ag Working Group, the Maui Coffee Association and the Flower Growers Association, but I'm speaking on behalf of myself as a homeowner. And I first want to thank you guys for the presentation and I really want to thank you for having them do that first because it's so much more helpful to have some education about what we're talking about besides our own assumptions. I wanted to talk first about the faucet account, faucet count, I imagined it was about water usage but I didn't realize it was water usage all at the same time which makes it seem even more crazy to me with all due love and respect. Because I don't think it matters how many faucets we have in our house, how much water we're using at one time, it's far more relevant how many people we have in our house. And as an example of that I have a house in Kihei that four people live in and they have the same size water meter as the people right next door who have 14 people living in it. And so, you know how, many faucets are going to get turned on is relevant to how many people are living there. So I just find this faucet count illogical and it's fascinating to me so I really appreciate you guys looking at it and trying to figure out another method. And as far as catchment goes and greywater, I really feel that Maui County doesn't have a water problem, it has a water storage and a water use problem. And in looking at these together instead of isolated, looking at it as far as the housing issues go, looking at all these issues together is really helpful because if we used our greywater and we caught the water that it was available to us we would not have the water problem that we have, and if we allowed faucets we might not have the housing problem that we have. So these all work together so thank you guys for looking at that. I'd like to encourage you as far as the costs goes that you brought up, Mr. Victorino, is that, you know, they give subsidy to homeowners to put in solar and it's very expensive and we are doing it anyways. But there's so many people doing it that they are now limiting how many of us can do it. So if there were subsidies for catchment and greywater I can guarantee you the community would rise because being independent from the County is a high priority for most of us. So thank you for looking at all of these pieces and putting together a logical plan.

CHAIR BAISA: Thank you very much, Ms. Hogan. Members, any need for clarification? Seeing none, thank you.

MS. HOGAN: Thank you.

CHAIR BAISA: Ms. Willenbrink?

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MS. WILLENBRINK: Rosemary Robbins, followed by David DeLeon.

CHAIR BAISA: Members, the Chair intends if, I don't know how much testimony we have. Ms. Willenbrink is it a lot? Okay we'll try to complete testimony then we'll take our morning break.

MS. ROBBINS: Good morning, everybody. Rosemary Robbins, very concerned citizen. Wow. Water, by which all things find life. We get that caption on our bill every month. It's been brought up time and time again, water, quantity of, quality of and now we're hearing the wisdom of people in the community this morning saying we've got the County Water Department telling us how much it doesn't do, doesn't take responsibility for this, doesn't take responsibility for that, you'll have to deal with the people who are going to be putting in your catchment systems and greywater systems and whatever. Why a Maui County Water Department if they're stepping back from a lot of the responsibilities? We have a Councilmember who wisely brought up this morning that so many of our people can't afford financially to be able to do that, just we haven't figured out how to grow that tree with the money on it. And so we're leaving all these people out. If this is a County the people are in, \_\_\_\_\_. So somebody mentioned the "Show Me the Water" Bill this morning, well if it's by water that all things find life let's have some sort of a code that makes sense that says here's your water storage based on the fact that here is the water supply and the land use of Maui County's islands and in some cases possibly it's shore water by desalinization, I know that's expensive. Are the people not worth it? As somebody who directed youth camps in New Hampshire more than half a century ago I'm well aware of what happens with catchment, I'm well aware that that's why we trench tents when we pitch them and we trench them in tiers in order to be able to make sure that the land on which those youth are going to be sleeping is not going to be caught by a deluge. And I have to tell you that yesterday I didn't make it in for the very helpful, thank you again folks, support for the homework for this morning's meeting. I was taking care of a deluge in my neighborhood yesterday, sweeping with palm fronds, that water was coming right into the open brown trash containers, yesterday it was trash pickup day. So you've got an open huge brown container that nobody's gonna be able to lift, certainly not my 74 years of collection of cells here. To be able to get that out, and I was working around the neighborhood to tip those over so that I could and get them so that that water would not be taking land away which is going to destabilize the land around. There is so much common sense that's missing in what's happening here. And I don't question the good intent of the folks that have been hired, not by ourselves, we don't hire those people, those are appointments coming in from the Administration, but I don't question their intent. But there's a whole huge reality, sort of the cow at the other end of the rope, so the elephant in the room, that's all been talked about here before. Where are the action plans that go ahead to prepare for and alleviate these problems? The previous testifiers said that the problem is not having water, the problem is not having water storage.

MS. WILLENBRINK: Four minutes.

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MS. ROBBINS: We certainly could have filled reservoirs in the multiples yesterday where I live and we were out there trying to divert it, watching the water come up in the dry gulches, glory be to God, short time before they were going to overflow, where's the common sense in not being prepared? So if we can all work together and if we can work on a page of common sense, face facts, and include everybody, it would be wonderful. Thank you.

CHAIR BAISA: Thank you very much. Any need to clarify the testimony? Thank you.

MR. ROBBINS: You're welcome.

CHAIR BAISA: Ms. Willenbrink?

MS. WILLENBRINK: David DeLeon, followed by Chubby Vicens.

CHAIR BAISA: One way traffic. Good morning.

MR. DELEON: Good morning. Good morning and aloha, I'm Dave DeLeon representing the REALTORS® Association of Maui. On the fixture count issue, that we're not all engineers in this room and left to our own devices to try to figure out how the thing works, I really appreciate the presentation this morning, that helps clear it up, we're dealing with a national standard and with not a whole lot of flexibility probably involved with it. So but we still are dealing with the reality of how this is one of the barriers to affordable housing in Maui County. So how do you go, how do you work your way through that? You know from the non-engineer consumer side of the picture is you look at this count number and you know the realities, I mean you look at the houses down on Papa Avenue that are, I think have what, 16-18 bedrooms in them. You know that there, you know they're not being handled by 31 fixtures. You've seen the testimony from Mr. Stice where his situation where he had by, because of the situation he was in he had three residences well over 31 meters...fixtures operating off of a 5/8 meter without a problem. So you got the national standard over here and then you got the imperial knowledge that some of our folks have in the community and it ends up with a, you end up with conspiracy theories like this is a plot to limit water use in Maui County. You know and that's, you know, a non-engineer, Joe Public's perspective. When I hear that this is a national standard and, you know, my head goes right away to well I don't want to butt my head against that, so the immediate thought that came to mind this morning listen to this, unencumbered by the vetting process or talking to anybody else so you'll be the first ones to hear it is why don't we try to do junior water meters for ohanas, you know, have a 5/8 that you can only have 15 fixtures on. And that they can be put on the same property without having to bust up the national standard and be much reduced to the national standard and maybe not have the heavy source assessment attached to it or something. But rather than trying to beat or win against this national standard that the Department seems to be pretty locked into, let's find another way around this, another way of doing meters might be the answer rather than trying to work against the stream. And having stuck my neck out on that I think I'll stop there.

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CHAIR BAISA: Thank you very much, Mr. DeLeon. Any need to clarify the testimony?  
Seeing none, thank you.

MR. DELEON: Mahalo.

CHAIR BAISA: Ms. Willenbrink?

MS. WILLENBRINK: Yes, Chair. Chubby Vicens, followed by Pamela Tumpap. Losing my voice.

CHAIR BAISA: Good morning.

MR. VICENS: Good morning, Chair Baisa. Good morning, Members of the Committee. I am Chubby Vicens and I'm speaking as an individual, and I came this morning with a single reason and that was greywater usage. However, as the explanations were put on the board I realized that you were speaking entirely about residential. And yet it doesn't say that so I was confused, I'm not confused anymore.

CHAIR BAISA: That's good.

MR. VICENS: Well I'm easily confused, let me put it that way. The, I don't see the correlation between 31 units and 1,200 gallons an hour of water flow, it's how it works out, 20 gallons a minute. I live in a house of three, very, very seldom does two or three people take a shower at one time, in fact I know that only one in my bedroom because my wife is still asleep while I take a shower. So I don't think the unit counts make a difference, it's how it's used. Then I look at greywater and I say to myself, I says if I take the dishwasher, the dish wash water that goes down the drain, if I take the machine water that washes dishes, if I take the shower water by itself, there's very little to clean up I think. Yet and then you combine the largest part of the equation which is laundry and you add that to the equation, well I know that no one in Makawao or Pukalani where the older homes are have or will, are willing to spend money to put a system in because it's very, very expensive as they described. So who is responsible for trying to move this greywater source forward? Who is responsible? Is it a combination of they and us? They meaning the Water Department. The Council through legislation? Is there an incentive to retrofit? Maybe that would help. What is the impact of the sewer charges on your water bill as a result of this? I realize you're still pumping through exactly the same amount of water through the meter and that's where they measure. So where is the incentive for me as a person to be able to reduce this fee which is almost 50 percent of my current water bill? So those are the things that I think about. And what is the bottom line cost to all of us, all of us? How can we solve the problem? It's a private-public partnership, all of us. The young man over here said earlier that we use 80 percent of our water every month theoretically, 64 percent could theoretically go into greywater landscaping, and I agree, I think it's a great, great thing. How do we do it? What are the benefits? What are the incentives? These are all the things that come through my mind today as I sit here trying to fathom through this. Greywater, no vegetation, why? You've cleaned it, you've tried to do it, is there a way to filter the system so that it can work? That's another positive



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thing that we might work on. And how do we know lastly that we got all the water that was in storage for a 24-hour period out? Is there a meter? Do we go out and look at it?

MS. WILLENBRINK: Four minutes.

MR. VICENS: Madam Chair, this is an interesting subject, I could go on for another couple of minutes, but I think you've got the gist of what we're talking about here shared by all of the people that spoke earlier. Mahalo for your kindness, mahalo to the Department for putting this on. I got a lot out of it this morning, and, Councilmembers, the ball is in you park. Thank you very much.

CHAIR BAISA: Thank you. Members, any need to clarify the testimony?

VICE-CHAIR VICTORINO: Chair?

CHAIR BAISA: Mr. Victorino?

VICE-CHAIR VICTORINO: Thank you. And thank you, Chubby, for being here. And thank you for one of my bigger questions later is the sewer charge because till today people understand the water bill as being the water bill even though sometimes two-thirds of that water bill is a sewer charge.

CHAIR BAISA: Right.

VICE-CHAIR VICTORINO: And the way it's set up now, you're absolutely correct, what comes in is what you're basically charged on. So greywater wouldn't have any effect unless we make some kind of, you know, amendment to that to make sure that that's taken into account. So it's one of those many issues. And I'm glad you said about the costs, you know, Ms. Hogan mentioned about government subsidies, well, you know, we've had a lot of government subsidies as far as solar because it was a national, a *national* push, then went to the States and then to the counties. Until water becomes a national push which is not far around the corner if you go to California, you go to Utah, you go to Nevada, you go to many states right now who have tremendous water challenges and they're only gonna get worse in the very near future and maybe then it'll become a national challenge. I go to it, all of the conferences and until it becomes a national challenge, it's just me against you. In other words you're little county figuring it all out. And we don't have the resources, but I'm all for doing what we can right now here in Maui County. So with your help and others in the room and you, Madam Chair, we've been working on this for many years, this is not something new, you know, and "Show Me the Water" and some of these other legislative hindrance maybe it's time to change it and I've said that for quite a while now. You know so publically I can say it's time to maybe do away with some of these and let's get moving so that affordable housing and housing in general can be built in this County for our people to continue to live, raise and enjoy what we've all enjoyed. Thank you, Madam Chair, and thank you, Chubby, for bringing up those points.

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MR. VICENS: I appreciate that.

CHAIR BAISA: Thank you, Mr. Victorino. Anybody else? Any clarification? Thank you so much.

MR. VICENS: Thank you, ma'am.

CHAIR BAISA: Ms. Willenbrink?

MS. WILLENBRINK: Yes, ma'am. Pamela Tumpap and then our final testifier Thomas Cook.

CHAIR BAISA: Good morning.

MS. TUMPAP: Good morning, Chair. And good morning, Councilmembers. I'm Pamela Tumpap, president of the Maui Chamber of Commerce, and I greatly appreciate, Chair, that you took the presentation in advance because that really helps us listen and learn and informs our testimony and actually that's what we came here today to do. You know it's already been said that water is the source of life, it's a precious resource and at the Chamber we have longstanding policies to maximize our efforts to reclaim water and reuse water. It's critical to our future development and our affordable housing so we support expanded options for collection and reuse to lower costs. We want to see greywater options and more catchment. I too heard the comment on the inability to meter, you know, that we're worried about flow because it could impact the efficiency of the meters and then we'd have an inability to meter and charge and I thought that was really odd. It felt very odd to me that that's part of the challenge, and I've heard over the years many comments about people who have been limited by the fixture count and it has hampered them from expanding their home use to allow more people in for sort of efficient flow in their home. And agree with Chubby's comments that, you know, I don't think all those fixtures are used simultaneously, so I would like to explore it if the calculation for how we came about that is 70 years old, I definitely think we should start challenging that and look at what's possible. You know I do feel like there are many great models. In the interest of fairness and disclosure, my other half is a landscape contractor, Island Landscape, he's done business in two very conservative states, California and Oregon, who very much care about their resource conservation and has seen grey use models, and he's been surprised that when we talk so much about water here in Maui that we are not there, especially because we're dealing with an island State. So I think there's many options, I appreciated seeing the San Diego model, and really feel like now's the time. Councilmember Victorino said, you know, the national levels looking at it, we should have been looking at it a long time ago. There are movies that have been talking about water is the thing that maybe future wars will be fought over because it's such a precious resource. So we really need to look at ways that we can recapture and reuse and that's a long standing policy of the Chamber and we certainly support this and thank you for the exploration of this topic.

CHAIR BAISA: Thank you very much for being here. Members, any need to clarify the testimony? Seeing none, thank you.

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MS. TUMPAP: Thank you.

CHAIR BAISA: Ms. Willenbrink?

MS. WILLENBRINK: Yes, the final person signed up to testify is Thomas Cook.

CHAIR BAISA: Good morning.

MR. COOK: Good morning, Chair, Council. My name is Thomas Cook, I'm here representing the Construction Institute [sic] of Maui, it's a local nonprofit trade group. We're affiliated with the Maui Chamber of Commerce. I'm a general contractor for the last 30 years, I also hold specialty licenses for structural concrete and grading and excavation. I'd like to address...I thank you for the opportunity for this information meeting, it's kind of refreshing to be here when it's not like the intense legislative, you know, tug, push, pull. I want to say, I want to be very supportive with the Department of Water Supply. I've noticed and witnessed over the last 15 years a massive transformation and I wanted to say to the better. I also want to caution the Council and this is, I don't want to ruffle any feathers but during the last budgetary hearing it was very painful for me to watch how political it became. The Water Department used to be autonomous for a reason but my sort of analogy of that it was like in a black box in baggie up on a high shelf and if you wanted to ask a question of the Water Department they take it off the shelf and take it out of the baggie and you look at the black box and there was no discussion. Right now this is extremely transparent, we have a Water Department that is based on engineering, calculations, forecast and just total props for these guys for all the work that they're doing. I'd like to address first the flow rate fixture count. My suggestion is that possibly you do a, you're willing to engage in a peer review with local other engineers because there is a disagreement insofar as the fixture count effectiveness and appropriateness. The Water Department has a very, has the burden of supplying water reliably and to health standards, so if they're conservative, that's their job. So that we as a community and organizations could potentially work with them to assist them to enable them to address this and not just sort of point a finger at them and say it's a problem. So I think that they're being overly conservative and if we can hopefully collaboratively work together we could address the fixture count. And I want to address the meters briefly, the way that was addressed to me it's not so much the County and correct me if I'm wrong, Water Department, it's not so much loss of revenue it's the fact that somebody for a prolonged period of time may be billed at a certain rate and then if the, if it's caught or addressed and their rate significantly increases then the Water Department has to address like wow man you're really jacking my rates, it's like no you just haven't been paying the appropriate price for years. So there's other nuances to it, it isn't simply they want their money. Now my two cents on the meters, they don't read the meters anymore they have a little gauge so by the same token that the methodology of the gears and whatnot, whether it's a Badger meter or whatever it is, it's just sort of like the burden is on the manufacturer to, that should not be the big obstacle, it is a reality, it is a fact but I don't buy into that being an obstacle. Briefly on the, I want to address the rain catchment. I lived on rain catchment for 40 years, well 30 years, my

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son has the property now. It's a viable alternative in the country, I don't think it's gonna be the solution for affordable housing. It's expensive, there's a big burden and a responsibility for the health aspect of it, and it's very appropriate that the Water Department is hands off because they are not in control. So they allowed us to build, I designed something that I would never apply for a water permit, we also had 165 inches of rain a year, so Haiku, country. And then I'm gonna...if I can have one more minute?

CHAIR BAISA: Yes. Go ahead.

MR. COOK: Address the greywater issue. I think there's and like so many things in Maui County in the rules and whatnot we have town and we have country, okay. Town you have density, multi-family housing, commercial and so the rules, the regulations, the permits, all of that it's extremely necessary and appropriate. Then you get country and that's where people get their backup, it's like, braddah I going put my greywater on my bananas, I'm gonna put 'em on the heliconia, I've been doing it forever. My kid's grandparents did it forever, you know, I have bright intelligent children and grandchildren and nobody has suffered from it. Now I understand the Water Department needing to take a step back and not condoning that, but Upcountry, you know, if you're gonna put it in a septic system and whatnot, so that's the challenge for the Council and that's the challenge for the Water Department is to identify that we have two basic different playing fields. But we have laws and rules and I don't know if I should thank you guys or not, you guys are the ones who make those laws and rules. But hopefully you can take that into consideration. Once again I want to say that the Water Department has evolved and done a great job, the burden is on the Council and the Water Department to not allow it to be politicized, they need to plan for 20 years. You guys are only here for two years at a time, there's a certain tension in that. Thank you for the opportunity to voice my opinion and represent Construction Industry of Maui. I'd just like to say our mission statement is to unify the building community through active communication, advocacy, education to sustain industry growth and best practices, and to hopefully cultivate all the plumbers and everybody else. So we are going to submit written testimony which deviates from my verbal testimony and Chantal will issue that later. So thank you for the opportunity and I hope that it's been helpful.

CHAIR BAISA: Thank you very much, Mr. Cook. Any need to clarify the testimony? Seeing none, thank you.

MR. COOK: Mahalo. Aloha.

CHAIR BAISA: Ms. Willenbrink?

MS. WILLENBRINK: There's no one further signed up to testify.

CHAIR BAISA: Okay. Is there anyone in the gallery who would like to testify? Last chance. I'm gonna go to the District Offices and make sure that we don't have anybody that

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has shown up since we made the first round. Hana, has, is there anyone wishing to testify?

MS. LONO: The Hana Office has no one waiting to testify, Chair.

CHAIR BAISA: Thank you very much. Lanai Office, Denise, is it anyone wanting to testify?

MS. FERNANDEZ: There is no one waiting to testify on Lanai.

CHAIR BAISA: Thank you. Molokai, Ella, is anyone there wishing to testify?

MS. ALCON: There's no one here on Molokai waiting to testify.

CHAIR BAISA: Okay, Members, there is no one in the District Offices. Oh we have a gallery person, come on up. This will probably be our last testifier so please just hang on for a minute.

MS. LONERGAN: Aloha and good morning. My name is Chantal Lonergan, also representing the Construction Industry of Maui. I am a general contractor here and more importantly one of the founding members of the new industry association that has partnered with the Chamber of Commerce. I thank you very much for all of your information and exchange of ideas, I really appreciate that. And speaking on behalf of the industry I wanted to say that we can, our membership supports both the County, the Chamber, as well as the Water Department in seeking alternative methods of defining and enforcing the water meters and the "Show Me the Water" Bill. And when projects takes expanded decades to develop then the community is not properly serviced and they're not getting the benefit of the infrastructure that is supposed to be a part of that development, and I think that's part of what ends up hurting that public opinion. So the Construction Industry of Maui is looking forward to assisting the County on all sides and all levels in finding an equitable solution that will allow shovel-ready projects to move forward and prevent water reservations to become used as commodities which impair the affordable housing initiatives that we have here in the County. I just thank you.

CHAIR BAISA: Thank you. Thank you very much for your testimony.

MS. LONERGAN: You're welcome. Written testimony will be submitted.

CHAIR BAISA: Thank you. Members, any need to clarify? Seeing none, thank you. Members, I don't see anyone else who wants to testify in the gallery and we have nobody in the District Offices, so without objections, I'd like to close public testimony for today.

COUNCILMEMBERS: No objections.

CHAIR BAISA: Thank you very much.

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**...END OF PUBLIC TESTIMONY...**

CHAIR BAISA: Members, we're going to take our morning break. Please try to make it no more than ten minutes. We have, we'd like to have our question and answer period. Meeting is now in recess. . . .(gavel). . .

**RECESS: 10:50 a.m.**

**RECONVENE: 11:05 a.m.**

CHAIR BAISA: . . .(gavel). . . Will the meeting please come back to order. Thank you very much for the recess and thank you everyone for staying with us through the presentations and through the testimony. Members, we now have an opportunity to ask any questions of the resource people that we'd like to ask and if they're not here and can't answer today well, we'll get those answers for you so proceed. Does anyone want to lead this off?

VICE-CHAIR VICTORINO: Chair?

CHAIR BAISA: Mr. Victorino?

VICE-CHAIR VICTORINO: I'd be happy to lead this off today, Madam Chair. By the way thank you very much again. You know this week have been a very interesting week, all of the Committees have been bringing up issues that we've all longed to hear answers to, and I'm very glad that the public is able to hear and share with us some of these challenges and possible solutions. So I think this is all, all a good thing. Where are...I need that handsome gentlemen right there 'cause he's the one that I have the most questions for, and I'll start really I think greywater is, greywater and catchment is my two things. The catch, the fixture count we could do away with that tomorrow and I know we'd survive, no offense to the Department, no offense to the Department.

CHAIR BAISA: Thank you, Mr. Victorino, I like that comment.

VICE-CHAIR VICTORINO: Yeah.

CHAIR BAISA: Go ahead.

VICE-CHAIR VICTORINO: One of the things I was interested is you were saying that much of this would have to be or, you know, put in a subterranean setup, in other words underground. So my question to you is first of all if this is all underground and you have the valve that switches the tank off and on, you know, to change from greywater to put into the sewer, how do you, if you got a single level house how do you control that? You know and you go back in your pictures, you know, 'cause if you have a two-story home or you have a home like mine which is raised off the ground I can see that being done very easily but if you're talking a single-level home Kahului, Wailuku, a lot of homes are single level, cement slab, which makes it little bit more challenging

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when you go cement slab. How do you propose to do that when you're talking, you know, 'cause you have that switch right, you said you can switch from sewer to greywater or back to sewer, how do you do that?

MR. DE ROBLES: Well that's one of the things that I wanted, that's why I mentioned the complexities. The more complex designs require, you know, a lot more labor and a lot more costs depending on the housing type or the property.

VICE-CHAIR VICTORINO: Okay.

MR. DE ROBLES: I'm not a plumber so I can't say, you know, you could terminate the main lines that are coming out of the house to the system.

VICE-CHAIR VICTORINO: Yeah.

MR. DE ROBLES: But maybe that's an option instead of digging, you know, I mean terminating and then, you know, what do you call it, branching it out.

VICE-CHAIR VICTORINO: Like what they did in San Diego?

MR. DE ROBLES: Perhaps.

VICE-CHAIR VICTORINO: 'Cause San Diego look like it was a single level home but I, you know, there's not enough pictures for me to have a real clear --

MR. DE ROBLES: Yeah.

VICE-CHAIR VICTORINO: --clear cut look at it.

MR. DE ROBLES: I mean there is a way to, there must be a way to do it --

VICE-CHAIR VICTORINO: Yeah.

MR. DE ROBLES: --to where you don't have to dig up your entire foundation to get to the pipes, just as long you're able to divert the sinks and the shower and the tubs and laundry and dishwasher for example, as long as you're able to divert that into the greywater system. I think anything is possible.

VICE-CHAIR VICTORINO: Yeah. And I agree and I think Mr. Cook also brought a good point that maybe for country this would be more applicable than town, you know, in town we may have more restrictions and the homes are closer and there's a whole gamut of challenges if you're talking in town or in an urban area versus a rural or ag area. So again maybe this is where we gotta focus is in areas where this is can be done and slowly move into the urban areas where eventually with reasonable costs or if we're gonna subsidize and I hate using the word subsidy because we subsidize so many aspects and now we're gonna add another one and there goes Mr. Taylor getting more

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grey hairs trying to figure out where he's gonna get the money to subsidize. Oh sorry, Mr. Taylor.

MR. DE ROBLES: Well the thing with a greywater system is that it's a win-win situation really. You don't have to tell people to stop consuming any more than they are now, what you're telling them is basically if they install it they take a percentage of what their waste, you know, what they're using and getting a discount. You know but they're not really stopping any more consumption than they are now. They're just able to use it for other purposes other than sending it to reclamation for additional cost to the County.

VICE-CHAIR VICTORINO: No. Very good, no and I agree wholeheartedly, and, Madam Chair, I would like for you to forward a letter on our behalf in regards to sewer charges. If we were to have something like this enacted how could we change or assist those who are doing this for sewer charges. Now again Upcountry a lot of them are septic tank so this is not...again with rural and ag areas not applicable but if we were to do it in town it would become very applicable and we would need to know that because they charge you what comes in, not what goes out. So it's a, you know, again that's why town it doesn't make a lot of sense unless we have some real major changes in the whole system itself. But I can see where Upcountry rural areas where this would be much more adaptable, you know.

CHAIR BAISA: Yeah.

MR. DE ROBLES: It is a really good idea anywhere really.

VICE-CHAIR VICTORINO: No, no, I not disagreeing with that.

MR. DE ROBLES: Yeah.

VICE-CHAIR VICTORINO: But I think in the urban areas we got more complexity as you mentioned than you would have in rural areas.

MR. DE ROBLES: Absolutely.

VICE-CHAIR VICTORINO: Yeah. So again I'm all for greywater, don't get me wrong, I really think it's a real viable solution but there's a whole gamut of questions and challenges that like you mentioned the complexities and we need to have some answers and maybe this is where we need to go from this point. The last thing I had was, you know, and this is not so much for you but it's the next subject matter is catchment, and it is my understanding catchment on the Big Island you have no water source from the County, absolutely none. You don't have a mixture, there's no backflow problems 'cause you don't have it. And that is one of the restrictions that the County has there is they will not put in sewer lines, I mean not sewer lines, water lines because these people decided to go on catchment. Oh yes mister...my sister lives there, I was born and raised there, Mr. Chang, I can tell you it is a fact, you cannot get water meters where you have catchment, they've done that. So you don't have this



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intermingling and some of the concerns that we have, on Maui it's a little different. And let me tell you something, you may have a 165 inches of rain in Haiku, that side of the island has lots of rain but when they don't it is super expensive, a truck bringing out water to fill your tank can cost you anywhere from \$175 to as much as \$400 one fill-up. That's fact, go check on it. My sister has to, had done that the last two years because of the tremendous droughts. The last year with all the rain it's not a problem, but when you don't have rain you got to truck that water in it, is expedientially [sic] expensive to truck water in. So catchment has great value but when you have a drought and you've got to bring the water in and you're not connected to the County source you find it very disadvantaged as far as that is concerned. So that's the only things I have about catchment, Madam Chair. If you're completely on catchment I got no problem but if you're gonna, you know, like was mentioned have water, County water and catchment I have a challenge with that because how does that fit when you have a lot of or when you have drought and you have all these catchment systems that are dry and you start using County water, you know, and do we factor that in as far as the drought is concerned. So being different on the two islands, the two districts that have catchment is something that, you know, we'd have to explore a little bit more. And like I say I got nothing against catchment I have nothing against greywater but there's some work that needs to be done and, you know, if we can find a happy medium I'm all for that. If we can build affordable housing through that methodology, I'm all for it, whatever it takes I'm for it. And finally, Madam Chair, it's not part of the subject matter but I will be looking to bring forward what I've been talking about for a long time, review of the "Show Me the Water" Bill and maybe getting rid of it finally once and for all, I think this County needs to have a more common sense approach. But that's another subject matter and I don't want to get deep into that. Thank you, Madam Chair.

CHAIR BAISA: Thank you, Mr. Victorino, you have a lot of experience to share and Chair appreciates it. Ms. Crivello?

COUNCILMEMBER CRIVELLO: Thank you, Chair. I really appreciate all of the presentations and your efforts to bring all this forward, and I think one of the testifiers said, you know, there's a separation town and country. And I, one of the questions I have if I can understand the rationale why if you go catchment you cannot have a water meter? Or that doesn't go together, can I try and understand that.

CHAIR BAISA: Resource people, as you answer would you please state your name so we have it for the record, as we try to type these up we want to know whose talking.

MR. CHANG: This is Herb Chang with the Maui County Water Department, Engineering Division. Try to answer your question, as far as private catchment systems people when they, usually what's happening is when they, Upcountry area where they, the existing structure uses up capacity, you know, uses up the total capacity of the meter where the meter can't support anymore fixtures, people sometime propose to use a catchment system to supplement. Is that, am I going in the right direction of the...

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COUNCILMEMBER CRIVELLO: I'm not sure if I follow you. I know you have your rules on flow and fixtures but if a, say someone has water meter and then decides maybe I need to also add a catchment so that's a private plus public water system. Is that something that's not allowed? Or can you have both or is it one or the other?

MR. CHANG: It's not allowed but it's just the case where when, for, to feed water fixtures, Building Permit review that's when the Department you know imposes its procedures. So if you want to just use catchment to water plants, nothing to do with internal plumbing fixtures, you can, we don't, the Water Department doesn't get involved, but as soon as you want to use the rain catchment system to, as part of Building Permit application to like service water fixtures then that's when the Department has the procedures where even though you plan to use catchment for these new fixtures we have to make sure that the water meter that's serving the property can also serve it when the catchment system is not functional.

COUNCILMEMBER CRIVELLO: Okay. Thank you. If I may, Chair?

CHAIR BAISA: Yes. Please proceed.

COUNCILMEMBER CRIVELLO: Can you clarify what one of the testifiers made mention that when you get a new Building Permit there's no fixture count, and when you add or add an extension or what have you then that's required. Is that correct? Is that a correct statement?

MR. CHANG: Yeah I'll try to explain, he is correct. In the Building Permit processing in the County the Department of Public Works DSA, Development Service Administration, for the first dwelling DSA does not route the permit to the Water Department for approval. So he is correct in saying that sometimes we have these huge houses with multiple excessive fixtures. But when the second dwelling comes in or if they want to make an addition to the first dwelling that was not approved by the Water Department, yes, we do, are in the process of reviewing that permit. He is correct.

COUNCILMEMBER CRIVELLO: Okay. Interesting. I have another one on greywater.

CHAIR BAISA: Yeah. Go right ahead.

COUNCILMEMBER CRIVELLO: And I really, really appreciate this subject matter because I think like Mr. Victorino mentioned, you know, country, that's part of the way of irrigation. Growing up my dad had patches or acres of banana patches and he actually used to collect the greywater from the washerette. And we even have, my nephew has a song that sings about that and --

CHAIR BAISA: Wow.

COUNCILMEMBER CRIVELLO: --how the "washa, washa wata" you know --

CHAIR BAISA: Yeah.

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COUNCILMEMBER CRIVELLO: --on homestead land kept us going. And so it really makes sense, I mean, you know, you had your ginger patch where you use your greywater, and I think there's, I think the sustainability buzzword and the recycling buzzword has to be something we need to resurrect and see how we really can reclaim or reuse what we're soaking into the grounds through the sewage or septic or what have you where, whereby it can be used, whether it's through reverse osmosis or what have you. But in the old days they figured out how they can do it, you know, and I think we have lots to learn from our elders and those in the country, and I'm hoping town can or the urban side somehow or other that can be engineered from the experts that that's a possibility for us to consider. Because long term we'll be able to provide this resource which we value for our great grandchildren and for the generations to come. So if it means that we don't have to ration the water during the drought system, during the drought times, we have this to keep us green and our landscapes or lands or our subsistence food probably in very healthy ways. So I think we can make it happen and good to have this presentation because, you know, I don't know if you folks determine the sewer costs or does it come from the Environmental Management Department but that would certainly help with, you know, the people who have to pay sewer costs and avoid their vegetable gardens or watering the yard which is all part of what we're trying to work towards. So I hope if there's anything that we can do as policymakers on this, Chair, I can support where you're coming from and hopefully we can make some difference in collaboration with the Department as well as your Board of Water Supply. So thank you again. Thank you.

CHAIR BAISA: Thank you very much, Ms. Crivello, you're, you expressed that very well. You know I, too, grew up Upcountry and all the washing machine water went to the bananas, the ti leaves, the gingers, the same things that apparently you experienced and none of us died. And the bananas we ate and I turned 75 the other day --

COUNCILMEMBER CRIVELLO: Oh happy birthday.

CHAIR BAISA: --and my mother lived to be 95. But, you know, it will not work and I understand all of the concerns about the difference, and I appreciate the testifier mentioning the difference between country and town, you know, you just can't run water into stuff if you're in a very tight environment but Upcountry with a big pasture it's just not a big deal. But we'll work together with the Department, I have great respect for our engineers and for the rules that they make and they have to live by. But maybe we can find some middle ground to make at least a few changes and not have this water running into...I don't...the reason why we were able to talk about all of this today and the cesspools is this water running into, you know, our septic tanks and running into the sewer system creates so many other problems for us. We all sit here and we're all dying with the EPA all over us about what we do with leftover water and all this stuff. So if we can eliminate that we'd also save a lot of money and not have to build a lot more treatment plants and whatever. So we're just trying to go back to the future and kind of, you know, take a practical look and change the thinking to see, can we learn from others, is there anything we can do, and together I think we can. You were trying to say something, Mr. Robles?

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MR. DE ROBLES: Thank you, Madam Chair and Councilmembers. I just wanted to address that in terms of how generations have been doing greywater and it's totally respectful I understand. I think from the DOH's perspective, and I can't, I'm not speaking for them, this is from what I've garnered from what I've been reading. It's more of an issue of policy, just kind of following code, so when people want to start applying for systems then it becomes complicated 'cause then you have to look at it with a microscope and examine exactly what's happening. And in terms of laundry to irrigation, some people and I'm not saying everybody but some people forget that a lot of the chemicals for example from your laundry or from your dishwasher or for the bathroom for the most part, is it could be cumulative in the soil, in, for irrigation purposes. So and the UPC basically states that I think they don't want you to use it for growing things because it shouldn't come in contact with, in other words once it comes out your carrots and stuff shouldn't be directly in contact, with...

COUNCILMEMBER CRIVELLO: Thank you. May I?

CHAIR BAISA: Yes.

COUNCILMEMBER CRIVELLO: I appreciate what you're saying because it makes a lot of sense.

MR. DE ROBLES: Yeah.

COUNCILMEMBER CRIVELLO: But like Chair mentioned, you know, some of us we may not have, be the most healthiest but we're okay, we're still here. But I have to say that, you know, the acreage where my dad did his banana, today we have citrus, so, you know, it still, the grounds are still able to use. We had to make use because we didn't have the infrastructure for all the fresh water or the potable water and we even, he even dug a well to use brackish for his farming. I mean so it took both, it took all trying to find all means to sustain our livelihood, and there's a lot of fear and you know what maybe people will go back using sort of sudsing or detergent that's not so chemicalized, maybe that will change things. You know we don't...

MR. DE ROBLES: Yeah, and you're right.

COUNCILMEMBER CRIVELLO: And I appreciate and I understand where you're coming from.

MR. DE ROBLES: And you're right a lot of the water that comes from your, that comes from laundry is actually much more predictable in terms of content because it's you're doing laundry, right, or you're doing dishwashing. You're not, if you start adding bathrooms, different sources --

CHAIR BAISA: Right.

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MR. DE ROBLES: --you don't know what's going into the drain so people could add a lot more chemicals into those sources than you would in laundry. You're not going to put all kinds of acids or whatever in laundry so that's the danger. Yeah.

COUNCILMEMBER CRIVELLO: Thank you.

CHAIR BAISA: Thank you, Ms. Crivello. You have any more?

COUNCILMEMBER CRIVELLO: No.

CHAIR BAISA: Mr. Couch?

COUNCILMEMBER COUCH: Thank you, Madam Chair. As long as you're up there, Mr. Robles, we'll go with you. You talked about greywater is only allowed in single-family homes only, why is that? I mean I would think multi-family units would be a really good place to be able to get enough water for the irrigation for the grounds and save water for the County and save sewer capacity for the County.

MR. DE ROBLES: Yeah. Thank you for the question. Yes, you're right, I mean we've been talking a lot about how we could expand the UPC code to include mixed use or commercial applications, and I also mentioned earlier in my presentation that the Hyatt for example, they're using greywater right now. But the UPC does state just single-use residential, and there's, and I can't speak for them so I don't know why, what the case is, single tank per residential home, but I don't have the answer to that question on why it's like that. All I know is that there is an ability to be able to mend the UPC to be able to expand and I think that's a worthwhile effort in this case.

COUNCILMEMBER COUCH: Okay. So that's, and I'm not sure if it's the State made that amendment to the UPC or is that the actual...

MR. DE ROBLES: The one I looked at was from the State. State of Hawaii.

COUNCILMEMBER COUCH: So the State made that change?

MR. DE ROBLES: Correct.

COUNCILMEMBER COUCH: Okay. Okay. The other thing is is, you know, you mentioned a geographic, geographically sensitive area, can you be a little bit more specific? I think we all know what but I just want to make sure.

MR. DE ROBLES: I just took that from the UPC, 2012 UPC that was amended and there's not much explanation in terms of, I'm talking, they're probably talking about wildlife sensitivity or maybe certain geographic, you know, a type. All those things are taken into consideration when we do a site analysis. So that's why it's quite important to get people involved when you're doing a more advanced system.

COUNCILMEMBER COUCH: Okay. Now I have questions for Mr. Chang and Mr. Taylor.

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MR. DE ROBLES: Thank you.

COUNCILMEMBER COUCH: Thank you.

MR. DE ROBLES: Thank you, Madam Chair, Councilmembers.

CHAIR BAISA: Thank you.

COUNCILMEMBER COUCH: First thing, I'll hit catchment, it's fairly easy 'cause the hard ones are gonna be the fixture units count . . . *(inaudible)* . . . Yeah. Okay. So, Mr. Chang, you said when you look at a private catchment system that you don't look at it at all so there's no fire protection rule necessary for private catchment system or is that a separate thing that the Fire Department would look at?

MR. CHANG: In the case of a subdivision where it's totally private, non-DWS system the Fire Department does review for fire protection.

COUNCILMEMBER COUCH: Okay. So they have to make sure that there's their fire flow protection at least?

MR. CHANG: Yeah. They're part of the review agencies for that subdivisions.

COUNCILMEMBER COUCH: Okay. Now to the fun subject, fixture units, I abbreviate them FUs, that's what it says, it's right here on the form. You know what good is this form to me? I bought a house in, when I bought my house way back in 2000 or '99, whenever it was, it was a house that was already there, I never saw this form and when I got there I saw a stub-out for a utility sink so I threw in a utility sink, and I said well, you know, I'm gonna do a sprinkler system so I put my own sprinkler system 'cause I've done that before in a prior life. So I put a ton of fixtures in there apparently, all do it yourself 'cause it's fairly simple, the stub-outs were there, there's no major plumbing. But yet this forms says, you know, if I intend to add more fixtures to my property I will inform the Department of Water Supply, I never saw this form or anything like it. So what good is this form?

MR. TAYLOR: We'll take a retroactive check.

COUNCILMEMBER COUCH: I don't live in that house anymore.

MR. TAYLOR: That's why it's retroactive.

COUNCILMEMBER COUCH: So, you know, that's kind of...

CHAIR BAISA: Go Dave.

COUNCILMEMBER COUCH: That's kind of one of the things that bothers me is that and what happens is, things get added after the fixture count, so, you know, Mr. Victorino

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brought up that hey, we can just get rid of fixture units and we wouldn't be any worse off for the wear and I tend to agree with him. Can you kind of elaborate on whether or not that's something we could do?

MR. TAYLOR: Yes. And I see the people in the audience just have been waiting all morning to have that question be asked.

CHAIR BAISA: It's why they came.

MR. TAYLOR: Well I can probably run out the clock till lunch now.

CHAIR BAISA: You have five minutes.

MR. TAYLOR: Okay.

VICE-CHAIR VICTORINO: Time's up.

CHAIR BAISA: Or less.

MR. TAYLOR: Every utility, water, sewer, power has to find some way to take their infrastructure ability and allocate it to users and charge appropriately. What is your fair share? Fixture units are part of the way we do that. So let me first talk about how County Wastewater does it. When you come in for a house or a building in County Wastewater they don't count fixture units, they have a list that says each house is, I don't know remember the number, is 350 gallons a day, a cottage is 250 gallons a day, each seat in a restaurant is 10 gallons a day, a hotel room is 100 gallons a day, office building is x gallons per square foot, et cetera, et cetera, and some of those numbers may not be right. I haven't looked at them in a long time. So they add that up and based on those averages, they assume that when you're building whatever your building that's how much you're going to use. In the Council approved ordinance for wastewater impact fees it doesn't have a cost per meter or hookup, it has a cost per gallon, so they multiply that times that cost and that's your impact fee. Okay, so what they do is they use these averages of what a typical house uses, you know, 350 gallons a day of sewage, et cetera. Okay, so that's how they allocate how much of their capacity is for a house or for a building and how much each user has to pay, so they don't use fixture counts, they do it that way. Maui Electric when they charge us as a big industrial user, I'm not exactly clear, they have a bunch of different rate structures, ours has something to do with a 15-minute maximum charge so whatever our 15-minute max is they use that as a multiplier for the whole year on top of our bill and that's our share of what, our share of that infrastructure to support us, so that's how they charge us our fair share. That's how electric does it. What Water does is these fixture units, we say how many fixtures do you have, therefore what size meter do you need, and then in the Council approved budget ordinance it says how much for a meter. So those are three different ways of doing exactly the same thing, allocating so as a utility we know here's what's being built, can we support it, you know, how much are we taking off our master list and is everyone paying their fair share. Fixture units are a part of that. So if you just got rid of fixture units, let's take

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Mr. Victorino's house in Wailuku he has a 5/8-inch meter, 5/8-inch meter from the manufacture's specs can handle 20 gallons a minute. Twenty gallons a minute over 24 hours is 28,800 gallons, but when we gave Mr. Victorino a 5/8-inch meter we assumed that he would use about 500 or 600 gallons a day, not 28,800. So the fixture units are what limits him to realistically using around 500 or 600 gallons a day. Without fixture units he could put a huge tank in, run his meter 24 hours a day and serve 50 houses. That's not why we gave him a 5/8-inch meter, we didn't allocate him 28,800 gallons a day, we didn't charge him his fair share of infrastructure for 28,800 gallons a day. We assumed he'd be using 600 gallons a day or so and the 5/8-inch meter handles the ups and downs. So we could get rid of fixture unit counts, we could get rid of the whole process and do what County Wastewater does. We could come up with a list saying a house is 600 gallons a day and a cottage is 300 and a restaurant is x gallons per seat. Migrate the rate structure away from meters and to gallons, you know, and transfer the Upcountry meter list from meters also to, you know, number of houses and things, you'd have to change the whole system. That might be better, it might be worse, but you just can't pick fixture units, get rid of it and leave the rate structure the way it is, leave the water system development fee structure the way it is. Everything's built around this overall accounting process of money and water allocation. So we could switch, do something different like MECO does, like County Wastewater does but we'd have to change everything, so it is part of the overall structure to fairly allocate, fairly track and fairly charge for infrastructure.

COUNCILMEMBER COUCH: Okay. Well I have, that just brought up a few other questions. I was chatting with Chair White at the break and he had done some calculations, I thought he was going to be back here to discuss those, so maybe I'll throw some if I can remember what he said.

CHAIR BAISA: Mr. Couch, just so that you don't feel that we have to answer all the questions today I want you to know that I will bring this up as a freestanding agenda item.

COUNCILMEMBER COUCH: Okay.

CHAIR BAISA: And we can go into it more at that time.

COUNCILMEMBER COUCH: Okay. This was kind of a --

CHAIR BAISA: Yeah.

COUNCILMEMBER COUCH: --eye opener for me when he said he did a calculation, you know how he's with the spreadsheets, he did a calculation that for every gallon of water used in a 5/8 meter it was 1.5 fixture units allowed for that gallon, but if you had a 4-inch meter, I think it was a 4-inch meter he said it worked out to be 8.5 fixture units per gallon of water used. That doesn't seem fair, you mentioned fair, that doesn't seem fair if you have the bigger meter per gallon of water used the fixture units was tremendously high.



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MR. TAYLOR: Yeah. I think that comes back to what Mr. Chang said in his presentation about this hunter's curve when you have this massive hotel with a huge meter you know they're not all gonna be used at the same time, so all of these things come down to some statistical methodology that the more you have the less are being used simultaneously. So I don't think a linear, just a linear comparison is ever gonna work in that kind of situation.

COUNCILMEMBER COUCH: Okay. And lastly, what do, you know, the, Chair Baisa mentioned that all the other county, we're the only County that uses fixture units. What does City and County use, what does Kauai use?

MR. TAYLOR: No. City and County of Honolulu uses fixture units, in fact they charge per fixture unit. So when you come in if you want a bathroom and you're adding two fixtures you have to pay some fixed fee I believe per fixture, and what Honolulu does is because I think they charge, I haven't looked at their rate structure since Budget, but I think they charge the same for everybody. So if they think that you are using so much water that the 5/8-inch meter's too small for you, they'll just come and retrofit it with a 3/4 or a 1 inch or whatever, the costs are the same, you just charge per fixture unit. And if they feel that the readings, your water usage is so high that it's too high for that size water meter they'll just put a bigger one in. So that's a, again a different way of doing it but if you look at their system development fee it's not per meter it's per fixture unit, so they still use fixture units.

COUNCILMEMBER COUCH: Which is kind of what almost every one of those --

CHAIR BAISA: Yeah.

COUNCILMEMBER COUCH: --testifiers was saying is when we get to this limit of fixture units we have to stop and we can't add unless we change our water meter which I understand. But I think and this is for the discussion further is that, that's the way to do it per fixture unit. You know if they want to put 2,500 fixtures in their --

CHAIR BAISA: Pay for it.

COUNCILMEMBER COUCH: --house or their big property, that's fine, you guys do the math and find out what size meter they need and charge them accordingly.

MR. TAYLOR: So...

COUNCILMEMBER COUCH: I have a feeling that might be a way...I mean just as a quick glance you know there's all the engineering and all that that may change that but just as a common sense kind of way to look at it maybe that might be the better way to do it.

MR. TAYLOR: And we're not against that and that's my point of saying how there's different ways to do this. Our Department's methodology have evolved over many years, again to match the water system development fee, the monthly rate structures, different

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charges for different sized meters, the fixture unit counts, this whole methodology, we could shift all of it but you can't just change one portion of it is my point. So we would need to figure out how to shift everything simultaneously to accomplish that. So we're not saying that's a bad idea, I'm not saying that's a worse way or even a better way but it's a different way and we have to look at all the facets of it and not just change one piece and that's really my only point. Fixture units are a part of the overall methodology, we can't just change fixture units without changing all the other pieces appropriately.

CHAIR BAISA: Okay. Mr. Victorino?

VICE-CHAIR VICTORINO: Yeah, and my last time and I know --

CHAIR BAISA: Okay.

VICE-CHAIR VICTORINO: --we're getting close, we got bare quorum and some of us have to go pretty quick and so I understand that. You know just to, you know, and Mr. Taylor, I understand change is always difficult, Madam Chair, and we're gonna discuss more. But part of that is we have already put in tier structures just to address what you were talking about when people use more. Right? We put in this tier structure for that purpose. No, you didn't put tier structures because...

MR. TAYLOR: I believe that the tier structures are not about the upfront infrastructure costs, the tier structure are about the difference in production costs of volume.

VICE-CHAIR VICTORINO: Well and aren't we talking about more fixtures, more volume and all that? So anyhow I won't go deeper in that. We'll leave that alone. But finally I'll say this, Madam Chair, you know, whatever things we start moving towards or discussion we move towards I will say that the other departments and our methodologies they use when they develop homes, it's not called fixture count but they have user fees that are put in there. And please check into that, Ms. Willenbrink. Because there is a methodology for which I know it's not unit count or fixture count but there's a system for which the house built so much gallons are allowed per fixture and they have a fee and that is put in for development. Each county runs a little different, and remember again I go back to the statement I made earlier, we're the only County that the Water Department falls under.

CHAIR BAISA: Right.

VICE-CHAIR VICTORINO: The other three counties run it separate, autonomous bodies.

CHAIR BAISA: Right.

VICE-CHAIR VICTORINO: So it's really different.

CHAIR BAISA: Right.

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VICE-CHAIR VICTORINO: So anyhow with all that being said I want to thank Mr. Taylor and Mr. Chang, and I forgot your name again.

MR. DE ROBLES: Mr. De Robles.

VICE-CHAIR VICTORINO: Mr. De Robles for today's information, I think it was very enlightening. I think the public has a much better understanding, Madam Chair, and there's some work to be done and I think you and I have the same time schedule, we're gonna be moving on it and I hope the rest of our Members are willing to work along with us to get some of this accomplished. And that we can leave and walk out with some of these issues when we walked in wanting to accomplish. Thank you, Madam Chair.

CHAIR BAISA: Thank you, Mr. Victorino. Chair is very appreciative for the participation today. I want to thank the Department, you know, I've been working very, very closely with them and they've been very, very responsive. I'm sure that we're encroaching on their time big time by saying we need this now and can we do this by the next meeting, and they've been just really wonderful meeting with us for hours at a time, looking at all of the ideas and options and I want to thank them a whole lot. And I want to thank my Committee, my Water Resources Committee has been extremely supportive and participatory and my own Staff, and public has, you know, stayed with us. I want to tell the public and this is, I intend to close the meeting on this note. You know we promised you at the last meeting that we're gonna bring back that fire protection bill that we're working on but after that meeting we met again and we saw that there was additional opportunity for making the bill even better and more beneficial. So we're taking a little hiatus here while we continue to work on it, but it's gonna be coming back very soon, Legal is working on it right now and we've worked with the DSA and also with the Public Works. And so we're trying to present the best possible bill we can so we use our time well. Also I heard many times today people say, well, we need to deal with the "Show Me the Water" Bill, I want you to know that that is in the works, we're just about ready to have the meeting on it, it'll be coming soon, and of course I do intend to bring this fixture thing back where we can have a really in-depth discussion. Now that we've had the presentation and the public has seen and the Members have seen how complicated it is. You know everything's really simple and Mr. Victorino is probably grinning 'cause he went through this for so many years, everything you bring forward sounds really simple and then you start digging at it and you start looking at all the rules and all of the things that you have to deal with and it takes a lot of time, a lot of meetings, a lot of research before you can feel comfortable in bringing something to the Committee. So trust us, we're working very, very hard and we do want to make a difference. So, Members, I think that is the end of our business for today. Madam Staff, you want us to defer this item?

MS. WILLENBRINK: Madam Chair, a clarification please.

CHAIR BAISA: Yes.

MS. WILLENBRINK: The follow-up letters you would like me --

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CHAIR BAISA: Yes, please, if you would.

MS. WILLENBRINK: --to do those? Okay.

CHAIR BAISA: I'll work with you on those.

MS. WILLENBRINK: Very well, and yes, this would be a deferral.

CHAIR BAISA: Yeah I think we, Members, without objection, I want to defer 'cause we want to talk about this some more.

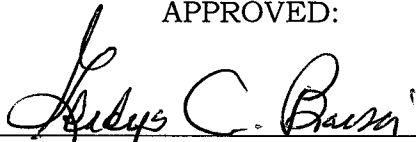
**COUNCILMEMBERS VOICED NO OBJECTIONS.** (Excused: RC, EC, and MW)

**ACTION: DEFER PENDING FURTHER DISCUSSION.**

CHAIR BAISA: Thank you very much. Thank you very much, everybody, and we made a good timetable too. The meeting is adjourned. . . .(gavel). . .

**ADJOURN:** 11:45 a.m.

APPROVED:



GLADYS C. BAISA, CHAIR  
Water Resources Committee

wr:min:150819:cvk

Transcribed by: Cheryl von Kugler

**WATER RESOURCES COMMITTEE**  
Council of the County of Maui

**August 19, 2015**

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CERTIFICATE

I, Cheryl von Kugler, hereby certify that the foregoing represents to the best of my ability, a true and correct transcript of the proceedings. I further certify that I am not in any way concerned with the cause.

DATED the 22<sup>nd</sup> day of September, 2015, in Kihei, Hawaii



A handwritten signature in cursive script, appearing to read "Cheryl von Kugler", is written above a horizontal line.

Cheryl von Kugler