Update on the Public Hearing #1 Held on April 26, 2018

At 6:40 p.m. on April 26, 2018, in the Auditorium of the Mission Memorial Building at 5500 South Beretania Street, Honolulu, Hawaii, the Public Hearing commenced to discuss the Five Year Water Rate Proposal.

PRESENTATION

Dave Ebersold: Welcome, everybody.

My name is Dave Ebersold. I'm going to be facilitating our meeting tonight. I have a couple important things to mention. My role is to make sure that we get through the presentation materials, and that you have the opportunity to ask questions and get answers to those questions. Then we will be taking public testimony.

Our meeting is going to be divided into three parts. The first will be the presentation. After the presentation, you will have the opportunity to ask questions about anything that you saw in it. We'll have microphones going around so that you can ask those questions.

Then, after that, you will have the opportunity for public testimony. We'll be using these microphones up front for public testimony. When you signed in, you had the opportunity to indicate if you wanted to give public testimony. We'll begin with that list. If anyone didn't have the chance to check that box, we'll still be able to take your testimony.

In the back of the room where you came in, there are exits on each side. Restrooms are right across the hallway if you need. Make sure your cellphones are silenced. Still plenty of food outside, but no food is allowed in the auditorium.

I would like to kick us off and introduce you to Bryan Andaya, the Board Chair of the Honolulu Board of Water Supply.

Bryan Andaya: Aloha, everybody.

My name is Bryan Andaya. I'm the Chair of the Board of Water Supply. I thought it was really important to personally be here to represent the Board and to listen to what you all had to say. And really, tonight, we think about providing water for life.

To make it for life, we have to think about the future. Tonight you're going to hear a lot of numbers and percentages and water rates, but really, this hearing is about the investment for the future. It's about paying it forward, so that we have water for life.

And not just water for our lifetime, but for the lifetime of our kids and future generations. So without further ado, I'd like to introduce our Manager and Chief Engineer, who will begin the presentation tonight.

Ernie Lau is our Manager and Chief Engineer. He is a former Manager of the Kauai Board of Water Supply and he was also former Deputy Director of the Commission on Water Resource Management. He brings an entire career of experience and we're very, very fortunate to have Ernie as our Manager.

Ernie Lau: Aloha. Good evening, everybody. And thank you. I'm Ernie. I'm the Managing Chief Engineer for the Honolulu Board of Water Supply and Bryan Andaya is our Board chair. Thank you, Bryan, for that great introduction.

I have been working in the water business for quite a while, both here in Honolulu and also in the county of Kauai for the water department, and at the state level and the water commission.

We're here to talk about water today and what we need to do to keep the water available for our community. All life depends on water.

The Board of Water Supply was created in 1929 – 89 years old. It is a utility for our community. Our mission is to provide safe, dependable and affordable water for our community, so when you open your faucet, you can expect that water to be coming out anytime day or night, and that it is going to be safe to drink right out of the faucet.

It takes a lot of effort to get the water from our underground aquifers to our customers. Water is in underground aquifers in the lava rock and also in the mountains trapped behind some very dense lava rock. Every day we serve 145 million gallons of high quality drinking water to about a million people across Oahu.

It does take a lot of effort. Water originates from our sources, a lot of which are in the mauka lands. When the ua (the rain) falls in the mountains on our watersheds, that is really our source of supply. It is really important that we care for the watersheds.

We have 13 tunnels drilled into the hillsides into the mountains. When they hit water, it flows freely by gravity from those tunnels, so, we do not have to pump it. Our largest source is probably our Waihee tunnel on the windward side.

We also have five shafts. Our largest is our Halawa shaft built in the 1940s in the Halawa valley. That shaft can produce over 10 million gallons of water a day.

We have well stations all over the island. We have 194 groundwater wells and pumps around Oahu to provide this 145 million gallons a day. Some of it has to go through treatment systems, especially in Central Oahu where there used to be a lot of pineapple and sugarcane farming. We are still dealing with some of the chemicals that they used, especially to grow the pineapple. For the last 30 years, we have been treating the water with carbon. Some of you may have a carbon filter at home on your faucet. Ours is just a bigger version. Just imagine that one tank holds 20 to 30 thousand pounds of carbon. We use about one million pounds of carbon per year to treat the water to make it safe.

We send the water to our tanks up on the hills. These are concrete tanks with roofs on them, and we have 171 of them.

We also have to boost water to higher elevations on our island because you have people that live in the back of the valleys or at higher elevations on the ridges. The water may originate at lower elevations, so we have to pump it up to get to those homes.

From there, it flows through 2,100 miles of pipeline in our system. If you stretch the pipes end-to-end, you could almost reach San Francisco from Honolulu.

We have 21,000 fire hydrants that provide for public safety for our community, for the fire department to fight fires.

That water goes to 170,000 customers in our system all over the island, the vast majority being our residential customers. So, that's what it takes to provide water every day, every hour, every minute to our community.

Like Bryan said, the big challenge is not only about taking care of water for today but it is also about taking care of the future because our life depends on water. We really cannot stop working toward this effort of providing safe, dependable, and affordable water to our community.

And the question is: How do we do that? Over the last four years, we developed a 30-year water master plan. It is a long-term plan that is a roadmap looking forward for the next 30 years. We looked at every part of our water system from tanks to pumps to pipelines to the source itself in the watersheds.

We also identified necessary improvements, and there is a summary about our 30-year infrastructure investment plan. We identified projects we need to do for the next 30 years to make sure that our community has safe and dependable water at all times.

All of these take money and investments. Because Board of Water Supply doesn't get any property tax revenue from the city, we have to pay

for the operation and maintenance of this large complex infrastructure through our water rates.

Everybody paying water bills helps to ensure that our water system can operate. We have to balance the effort of investment with the costs that customers have to bear. We are very aware of the affordability issues.

One of the findings of the water master plan is that we need more drinking more water supplies, particularly in the Ewa, Waianae and Honolulu areas. This picture is what you would see if you go down into Halawa shaft. You can go underground about 145 feet and you will be able to see the top of the water aquifer. You are all welcome to visit, just let us know.

Pumps are the heart of the system. We have tunnels sources that don't need pumps, but they're not providing a lot of water to our community. We deliver 145 million gallons a day on average. A lot of that water is pumped. We move water from the underground aquifers into our pipes or up the hills to serve those customers on the hillsides. So, pumps are very important. One of the findings of the water master plan was that we need to put in additional pumping units in different locations to provide redundancy and reliability to our water system.

Unfortunately, with the 2,100 miles of pipelines, the reality is we have main breaks periodically. With 2,100 miles of pipeline, there are going to be breaks periodically. Right now, we have more than 300 breaks a year. Last year there were about 350 breaks. The pipes are underground and they suffer from issues of corrosion, poor soil conditions, pressure, and groundwater that in some cases causes corrosion to accelerate.

I want to thank you all for all your hard work for these many years in trying to save water because this is an amazing story. Since the 1990s, Oahu water use has been cut by 30 gallons per person each day. That's saving over 12 million gallons a day. That's a great story, but we still need to do more for our community.

Why? We are facing climate change. That is one of the biggest challenges for us because we are an island in the middle of the ocean. We depend on rainfall for our fresh water supply. But also, we're going to have the effects of climate change on that rainfall, and rising sea level issues. We can expect more intense storms to become more frequent. And you just saw the amazing flooding that occurred on Kauai on the north shore, especially. They think of it as a tsunami from the mountains instead of from the ocean – there was so much water that came down in such a short period of time. East Honolulu and Waimanalo really took a hard hit too. So, we need to diversify our water supply to adapt and prepare for climate change.

I talked about watersheds, our sources of supply. They are extremely important. The water master plan recommends that we need to spend

more effort and money taking care of the watersheds, and encouraging conservation among our customers.

We've identified 800 projects that we need to do over the next 30 years to improve the water system. That will cost about 5.3 billion dollars.

Over the next 10 years, these are some examples of some of the planned investments. For reliability and resiliency, we will invest almost a half a billion dollars. For projects to reduce the number of main breaks, we're looking at investing over 800 million dollars in next 10 years.

Right now, we replace about six to seven miles a year. That needs to increase. Through the master planning effort, we have identified that we need to bring that up to replace at least 21 miles a year. Our system has 2,100 miles of pipelines. One percent of 2,100 miles is 21 miles. We need to get to that place so we can bring the number of water main breaks down over time.

In this diagram, the yellow diamonds are the actual numbers of main breaks each year since 2010. They were up around 400 breaks a year. Right now, that number of breaks is around 350. If we only do the status quo with our capital improvement program and replace 6 to 7 miles a year, you can see what happens: The number of main breaks will increase over time.

But if we ramp up to replace 21 miles a year in the next 10 years, you can see that these main breaks will continue to be a little high right now. But over time, by diligently replacing 21 miles a year, that number will come down. And that's where we want to try to sustain it. It is really vitally important that we actually start now on this effort.

That is a little bit of background. You came here to talk about water rates. I will turn it over back to Dave Ebersold, who is our consultant from CDM Smith. They have been working hard for the last 4 years on the master planning effort and the water rates.

Dave Ebersold: Thanks very much, Ernie.

So, let us talk about water rates. As Ernie mentioned, this is the way that the Board of Water Supply pays for everything that it accomplishes from operations to the system to building new projects, and taking care of all of those items that Ernie talked about.

We are talking about water rates tonight and I want to draw a differentiation: We are not talking about sewer rates. Who in the audience gets a water bill? For most of you, it is a combined water and sewer bill. The reason it is that way is that the Board of Water Supply serves as a billing service for the Department of Environmental Services or ENV. That is why you see it on a combined bill. But they don't have

control over those sewer rates. Rather, the only thing the Board of Water Supply controls is your water rates. So, that's what we're talking about tonight.

Water rates are being proposed for a five-year period beginning in July of 2018 and extending through July of 2022. There would be no increases in rates until July of 2019, a little more than a year from now. The increases that we are going to be going over tonight are expected to generate an additional 60 million dollars over that time period.

So, what is the Board of Water Supply committed to doing with these new rates? To raise rates gradually; to provide a low-cost essential needs tier; to encourage conservation by the Board of Water Supply's highest water users; to address a current subsidy that single family residential customers get and in large part, is paid for by multi-unit residential customers; and to have it so that everybody pays their fair share.

Let us talk about the essential needs tier. The idea is that, for the first 2,000 gallons per month of water usage, you would pay a below-cost rate to cover essential indoor water use needs. All residential customers would get that first 2,000 gallons of water at that reduced rate. About 10 percent of the Board of Water Supply's residential customers never use more than 2,000 gallons per month.

There was a web-based survey that the Board of Water Supply did towards the end of last year. There were over a thousand respondents to that survey and one of the questions asked was whether customers would support a new tier with a very low rate to ensure affordability and reward conservation. About 53 percent of the people, over half of the people who responded to that survey, said yes, they would strongly support this.

I will talk a little bit about higher water users. Right now, the Board of Water Supply has a tiered water rate. The more water you use, the more you pay. The idea with this could be to shift the tiers a little bit to more strongly encourage conservation by the Board of Water Supply's highest water users. We will show you what these tiered rates look like in just a moment.

If you get a water bill, part of it is a monthly billing charge. Currently, it is nine dollars and 26 cents per bill. Every Board of Water Supply customer pays that same nine dollars and 26 cents billing charge every month regardless of how big your water meter is. If you are in a single family home, you have a 5/8 or 3/4 inch meter, and you pay nine dollars and 26 cents. If you are a hotel with an eight-inch water meter, which is pretty big, you pay the same nine dollars and 26 cents per month.

The reality is that those bigger water meters cost more to service. They cost more to replace. They cost more to maintain. So what's being

proposed is to move to a monthly customer charge that varies by meter size. The larger the meter, the more you pay.

If you are in a single-family residence, this is really a benefit to you because until this point, you have been subsidizing the cost of those larger meters. This change will keep that cost pretty low for you each month. You can see from the current level of nine dollars and 26 cents per month, it's proposed to gradually increase that to 12 dollars and nine cents per month in July of 2022.

Let us talk about what the proposed water rates look like.

The current rates structure is shown in the blue column. It has three tiers. The first tier is for water usage from zero to 13,000 gallons per month and that water is charged at four dollars and 42 cents per thousand gallons.

The next tier is for water usage from 13,001 gallons up to 30,000 gallons per month. People who use that increment of water are paying five dollars and 33 cents per thousand gallons per month.

Then for the three percent of BWS customers who use more than 30,000 gallons of water per month, they are paying seven dollars and 94 cents per thousand gallons.

So, what is the proposed change? The proposed change is first to have the essential needs tier for zero to 2,000 gallons a month and to have a pretty low rate for that water: three dollars and 79 cents per thousand gallons, gradually rising over the period to four dollars and 46 cents per thousand gallons.

The next tier would be for water usage from 2,001 gallons per month to 6,000 gallons per month. Why 6,000 gallons per month? Half of the Board of Water Supply's customers use 6,000 gallons per month or less per month. It seemed the logical place to make that tier. The cost for water in that tier would be four dollars and 46 cents per thousand, gradually rising to five dollars and 25 cents per thousand gallons per month.

The next tier goes from 6,001 gallons up to 30,000 gallons per month. The costs in this tier are a little higher, starting at five dollars and six cents per thousand gallons and rising up to five dollars and 85 cents. These are pretty modest increases over the period of time.

As I mentioned, the purpose is to send a financial signal to the highest water users to try and encourage them to conserve a little bit more. The top three percent of water users, those using over 30,000 thousand gallons a month, would start off paying eight dollars and 46 cents per thousand. And that would gradually rise to nine dollars and 25 cents per thousand gallons.

So, you are saying: That all looks great, but I do not know what that means in terms of my water bills. So, let us talk about that.

If you are a single-family residential customer and you are using 2,000 gallons of water a month, you would be in that essential needs tier. Your current water bill is 18 dollars and 10 cents per month. In July of 2019, that would drop by a dime to 18 dollars even. And then it would gradually rise to over the next years to just over 21 dollars per month.

If you are in the half of the Board of Water Supply's customers who are using 6,000 gallons per month or below that, you currently pay 35 dollars and 78 cents per month for your water bill. That would go up just ever so slightly in July of 2019 to 35 dollars and 84 cents, and then gradually rise over the next few years to 42 dollars and one cent per month.

If you are the average customer who uses about 9,000 gallons per month, you are currently paying 49 dollars per month for your water. That would gradually increase over the period to just under 60 dollars per month.

And for the highest water users, this is an example bill for someone using 35,000 gallons a month. Your current bill is just under 200 dollars a month and that would rise over the next few years to just under 229 dollars per month.

Multi-unit residential are complexes that have three or more dwelling units in them – apartments, condominiums, town homes. The rate structure is very similar. It has an essential needs tier for water usage in the zero to 2,000-gallon range.

But you'll see that the locations of the tiers aren't exactly the same as they are in single family residential. The reason for that is multi-unit residential doesn't use nearly as much water outdoors as single family residential does, so, the tiers are shifted downwards. It is the same type of inclining block structure. The more water you use, the more you pay for that increment of water.

So, the first 2,000 gallons are the essential needs tier. It starts at three dollars and 70 cents per thousand gallons, and gradually rises by seven cents over the next four years. The top tier starts at five dollars and 90 cents per thousand gallons and rises by about eight cents over the next four years.

One of the things to notice here is that these increases seem like they are a lot less than the increases that you just saw for single-family residential customers in those rates. Why is that? Currently, single-family residential customers do not pay the full cost to serve them. They're actually being subsidized by other ratepayers and in particular, by multi-unit residential customers.

The rates for multi-unit residential customers are a little higher. They have been paying more than it costs to serve them and that difference is, in effect, a subsidy to single-family residential customers. So, with these changes in rates, the Board is trying to gradually whittle away at that. Single-family residential customers currently pay about 88 percent of the cost to serve them. With these rates, we are trying to move that, not to a 100 percent, but to about 95 percent of the cost to serve them. They are still getting a little bit of subsidy, but the Board is trying to gradually whittle away at that. That is why these changes are different for single-family versus multi-unit residential.

Non-residential customers are businesses, restaurants, hotels, government institutions, shopping centers, hospitals, and things like that. They currently pay at the same rate, four dollars and 96 cents per thousand gallons regardless of how much water they use, and that basic structure will stay the same. Their rates will gradually increase over the next few years to five dollars and 27 cents per thousand gallons.

There are subsidies to other types of customers. For example, agricultural customers do not pay the full cost to serve them. The reason for that is to encourage local agriculture so that we all have access to fresh fruits and vegetables here. Agricultural customers get about a 40 percent subsidy and the intent is to continue their rates at that same level of subsidy.

Recycled water customers are customers who take recycled wastewater and use it for irrigation and industrial purposes. They pay a lower rate for their water and the reason for that is that we all benefit from them using recycled water. It preserves the drinking water supplies for our use in our homes and businesses and residences. That is something that we all benefit from; that is why they pay that lower rate.

The Board of Water Supply is also considering new fee waivers on some charges and various fees to reflect community values like supporting the construction of new affordable housing, supporting the construction of new homeless housing, and to make it financially feasible for people to be able to retrofit their buildings with fire sprinklers.

There are a number of other BWS charges in existence. Most of you never see these. If you have a private fire sprinklers system – let us say you live in an apartment building or a condominium complex that has a fire sprinklers system – the idea here is to institute a monthly fire meter standby charge. There is more detailed information about it in the rate handouts that are available in the back of the room. Hopefully you all got copies of those. If you are on a water system adjacent to the Board of Water Supply system and you have an emergency interconnection to the Board's system, you would also pay a standby charge.

The first time you connect to the Board of Water Supply's system, there's something called a Water System Facilities Charge and it pays for your

capacity in the water system. Assuming all of you are existing customers, this is something that probably does not affect you.

There is also an environmental regulation compliance cost adjustment and a power cost adjustment. These are rarely used but in the event that the costs for environmental compliance or power rise rapidly, the Board can adjust its usage rates by a penny per thousand gallons to help make up for that. I do not think either of those has been used in the recent past.

This is the process that we have been going through. This development of the Water Master Plan, the infrastructure investment plan, and the Long Range Financial Plan have been going on for about the past four years. Summaries of all those documents are available here tonight. Information is also available on the BWS's website. I encourage you to go look at all of that information.

Each of those plans, and in fact this whole process, has been developed with the advisement and input of a stakeholder advisory group that the Board has been working with. These are members of the community from all across the island, different interests, be it commercial, hotel, residential. In fact there are a couple of our stakeholder advisory group members here that I wanted to recognize. Cruz Vina, thank you for being here. Mark Fox, thank you for being here. They have volunteered their time and effort over about the past three years in meetings either monthly or every other month to help provide input to this process.

For the past four months or so, we have been going through a series of different options for changes to the water rates and looking at what impacts they would have on customers' water bills. Then in March, the staff went to its Board, which Bryan Andaya chairs, with proposed rates and asked for the go-ahead to get public input on them. The Board agreed.

That is why we are all here tonight. It is to get your input on these proposed changes and see if there are any other adjustments that are necessary. Then under the current schedule, a final proposal would go to BWS's Board for consideration in July of 2018.

As I said, this is the first of the four public hearings being held on these. The other locations are shown here. Staff has also offered to give presentations at all of the Neighborhood Boards. About 12 of those meetings scheduled and there is additional outreach efforts happening across the island over the next couple of months, seeking broad input to this process.

So, ask your questions tonight. Also, provide public testimony if you wish. If you do not want to do that tonight, you can send it by mail. You can put a card in these boxes here tonight. Or you can email or make a phone call. There are lots of way you can provide public input.

What I would like to do right now is open it up for questions and answers. If you have a question about anything you saw that's being proposed, we'll have microphones come around and you can ask your question. Ernie is here to answer. Bryan is here to answer. And a number of Board of Water Supply staff are here to help answer questions on anything you saw on the presentation.

Following questions and answers, you will have the opportunity to give public testimony. When we get to public testimonial, I will invite you to come up and use the microphone here.

We will begin questions and answers now. All you need to do is raise your hand and we will bring a microphone to you.

QUESTIONS AND ANSWERS

Speaker #1: You are just working on the changes in the water rates. What about billing? Are there going to be any changes in the way that you bill? Like now, you could call the Board of Water Supply customer service, and pay your bill over the phone without a charge. Are you considering adjusting that sometime down the line too?

Ernest Lau: Thank you. Good question. In terms of the billing over the phone, we are continuing that service so you can pay over the phone. We are also looking at a system where you can actually interact with the phone and make your payment. You would not have to hold for somebody to answer and take your credit card information and register the payment. We sometimes get over 1,000 calls in a day. My head of customer service is here, Jenn Elflein.

Currently you can also pay online through our website. At this point, we are not charging our customers. Typically, when you make a credit card payment, you might have a two percent service fee. But because we're a utility, the credit card companies give us a very good deal.

My IT division head is here, Henderson Nuuhiwa. The charge used to be about $1.55 per transaction. We thought it's good customer service for us to absorb that cost, and it's actually good that people can make the payments themselves online. However, in the future, if the credit card companies say they are losing money on that deal, we might have to move to a fee-based system. But we'll let you know before we do that. Thank you.

Dave Ebersold: Other questions?

Speaker #2: How did you change the first tier of water usage from 13,000 down to 2,000 gallons? That is drastic.

Ernie Lau: One of the things I heard the last time we increased water rates back in 2011 is that some customers said they are on fixed incomes. They are struggling with paying their bills, including the water bill even though the water bill is not very large.

We wanted to provide some assistance to people by making that first 2,000 gallons at below cost, to make it affordable to our customers. Ten percent of the 150,000 households we serve use only about 2,000 gallons or less. We wanted to make that amount very affordable.

We also wanted to create a positive incentive for people who try to save water by using less.

Our next higher tier is for water usage between 2,001 to 6,000 gallons per month. 6,000 gallons was selected as a breakpoint because half of our customers use 6,000 gallons or less, and half use more than 6,000 gallons.

I hope I answered your question, ma'am. It is a big difference from the current structure, which is from zero to 13,000 gallons. What we wanted to do was adjust the tiers to help people that are struggling, but to offer that fairly to all our residential customers, and to encourage water conservation.

Dave Ebersold: Other questions?

Speaker #3: I have a question about development at Kaka'ako and Ala Moana. This high-rise is going up and at really high density. Is it presenting a challenge to the Board of Water Supply?

Ernie Lau: Right now, we have the capacity to provide the needs of Kaka'ako. At one time, our very old Water Master Plan prepared by the HCDA (Hawaii Community Development Authority) estimated water demand around 10 million gallons a day on average for Kaka'ako. We have enough capacity to handle it.

We are monitoring the pace of growth. One of our current Water Master Plan findings was that we need to develop more sources. The master plan looked at population growth all the way up to 2040. From the present to 2040, we see that, at some point, we need to develop and drill more wells, to develop more capacity, and keep in pace with demand.

Good question. Thank you.

Dave Ebersold: Other questions?

Speaker #4: Good evening. My question is: You have rates for single family residential and multi-family residential. Where would the condominium high-rises fall in rates?

Ernie Lau: Anything more than two units would be considered multi-family (multi-unit) residential. That includes the low-rise townhouse type of developments or small walk-up apartment buildings. But it also includes the high-rise condominiums like Marco Polo or some of the new ones in Kaka'ako.

They would be considered multi-unit residential. It is a little confusing because these rates are on a per dwelling unit basis. Those large condominiums or even those townhouse complexes usually have one big meter.

To calculate the “per dwelling unit usage”, divide the total water usage from that one big meter by the number of dwelling units being served by that meter. Then you can apply these water rates to that per unit basis. Hopefully that answered your question.

Dave Ebersold: Other questions?

Speaker #5: Hi. I just had a question on the rates for the hotels and the shopping centers. That looks like they have this flat rate that's pretty low. And I'm wondering why it's like that and why they're not having that higher rate? I kind of understand the government and having flat fees but I don't understand the hotels and restaurants and the shopping centers. Can you explain that?

Ernie Lau: Very good question, ma'am.

I want to stress the rates are draft and we are seeking your input. We first determined the costs we incurred to provide this service for the different customer classes or types of customers that we serve. These are single-family, multi-family or multi-unit, non-residential, agriculture, recycle non-potable water customers.

What we found is, for the non-residential customers, they are actually paying more than their cost to provide the service to them. They are paying about 120 percent of what we call “cost of service”.

They are helping to subsidize other customers including, to a large extent, the single family customers, the recycled water and agricultural non-potable water customers. So, what we wanted to do was actually bring them from 120 percent of cost of service down to about 117 percent at the end of five years.

We recommend keeping the flat rate structure in this draft proposal because this non-residential category is really a mixed bag of different types of customers from schools, government buildings, commercial offices, hotels, shopping centers, fast food restaurants and industrial customers.

Rather than creating a very complicated rate system we thought: let us try to keep it simple, because they are paying more than the cost of service. I hope I answered your question ma'am. Thank you.

Dave Ebersold: Other questions?

Speaker #6: I was wondering about the fresh water aquifer. I understand it is going down and are there any plans to recharge them? Is there a danger that it goes down so far that we will get a salting problem?

Ernie Lau: Good question.

We are watching it very closely. We check on what we call the chloride levels or the saltiness of the water. If it starts to show that we're getting salty, we back off on how much we pump out to that location.

We also have some monitoring wells (not pumping wells that serve water to our community) that go all the way down to the salt water. We are very blessed with what we have on Oahu. The fresh water, when it falls on the mountains, soaks down through the lava rock but it actually floats on the salt water that is under the island.

This is not a pool or lake of salt water or fresh water. It is really in the cracks and crevices of the lava rock like a sponge. Fresh water, being lighter than salt water, floats on top. With our monitoring wells, we test to check on the location of that transition between the salt water and the fresh water. If we see it moving up, then we know the lens is perhaps shrinking in that area.

One of the things we're very concerned about is with climate change that changes the rainfall, and how that might affect what we call the sustainable yield or how much water can be pumped reliably fresh water without endangering the fresh water resource or the aquifer.

We are looking at recharge projects especially in Nuuanu. We already have a large reservoir, Nuuanu Reservoir No. 4, which used to have catfish fishing. Remember now that East Honolulu storm dropped a lot of water for a short duration, but it went all into the ocean. We're trying to capture rainfall behind the Nuuanu dam and then have it flow down to an area where we can actually treat the water and inject it back into the fresh water aquifer to save that water. The intent is to capture it, what they call storm water capture, then re-inject later down into the aquifer.

Good question.

Speaker #6: I noticed there was going be a salt water well done in Kalaeloa. What is the difference in cost between doing this recharge thing versus a well like that?

Ernie Lau: Seawater desalination?

Speaker #6: Yes. Desal.

Ernie Lau: Okay. I am going ask my head of my Water Resources Division,

Mr. Barry Usagawa, to help me with that question. It is a very good question.

Barry Usagawa: It definitely costs more because we have to pump seawater to a higher pressure to get it filtered through reverse osmosis treatment. That is why we are proposing to do a small plant, one to two million gallons, to make the system more resilient.

Desal is in the range of about 10 to 12 dollars per gallon to develop where a groundwater well is about half of that. But having desalination makes the system more resilient. Climate change projections to 2100 indicate the west side is going to get much drier. So we need to supplement and diversify our water system so we can always provide fresh water. It also allows us to cut back on some of the wells post-droughts so that they can recover and build back up.

Dave Ebersold: Great questions. Who else has questions tonight?

Speaker #6: Hey, Barry. Before you go, I just wanted to make sure I understand what you said. To develop a desal system versus developing a new well source, it costs 10 to 12 dollars a gallon to develop a desal plant versus half that to drill any well?

Did I understand that correctly?

Barry Usagawa: Yes. What is bringing down the cost of new connections is conservation. There was a question earlier about Kaka'ako and do we have enough water for that. Conservation actually reduced the amount of water demand in Honolulu by about 15 million gallons per day. We've gotten 15 million gallons more efficient in town. Those sources are still available as long as the rain does not decrease. So, to buy into that freed up capacity, it is much less costly than building a new source. That is one of the main reasons why.

Dave Ebersold: Are there other questions over here?

Speaker #7: Hi. So, the (tier) brackets – How are you guys planning to change them to different amounts of thousands of gallons? It seems like they are just a way to justify the drastic price changes. So how do the price changes for these next couple of years compare to the change in rates from the past years? Is it proportional?

Ernie Lau: Back in 2011, the annual increase passed for about a five-year period was about 9.65 percent. What we are projecting here is much smaller than that, and, for the five-year period, it only kicks in on the second year. So, it really is four years of increases.

For the average water customer using about nine thousand gallons a day, over the five-year period of increases, the cumulative increase is about 21 percent or so. This works out to annual increases of about four to five percent a year from year-two to year-five.

That is a good question. What happened back in 2011 was a result of years of deferred rate increases. I have been Manager now since 2012. It would be much easier if I did not have to come to our community to let them know that we need to increase water rates because we need additional money to invest into our water system infrastructure and cover the cost of operations.

But I feel so strongly about this because I look at my family and know we need to do what is right for our community. And that requires us to continue to invest at a certain amount into our water system infrastructure. We can't just say: Let's not increase water rates because we're going to have too many people unhappy with us". It is important that we keep on investing because, the moment we stop doing that, the problem does not go away. The infrastructure continues to deteriorate. So, we are going to have to catch up. I saw in 2011 that catch up is painful for our community. So, it's better to do smaller incremental increases over time.

If we can sustain that and get into the discipline of keeping investing, then we can try to bring main breaks down and we can protect and develop new water resources for our community. We can become more resilient to the effects of climate change, which is very important for us.

So, good question. Thank you.

Dave Ebersold: I see hands over here and we will get back to you sir.

Speaker #8: I just have a quick question in regards to what we are talking about: working on our infrastructure. And so in this inquiry, since how we can consider the cost of fuels going up and products and supplies getting to us so that increases are matching the cost of supplies increase?

Ernie Lau: That is a very good point because to operate the water system, it takes people, and some of those people are here tonight. But it also takes electricity. We have to get fuel for our fleet of trucks that go out and repair main breaks, that go out and investigate leaks, and that inspect the construction projects.

The long-term financial plan assumed an inflation rate of around three percent a year over time. So the plan accounted for increasing costs of operations. Good question, ma'am.

Speaker #9: Do you have anything in place where you monitor the water pipes and you can tell which ones are leaking since they are old? Can you tell before they break that they are leaking?

Ernie Lau: We actually have what we call the Leak Detection Team in our Field Operations. The head of our Field Operations is Mr. Mike Fuke. He is responsible for repairs of the main breaks. This Leak Detection Team goes out every day to look for leaks in the system because leaks, main breaks, do not always start with a large leak. Sometimes we can detect a small leak. Using sophisticated equipment, we can hear the sound of the leak and be able to correlate its location along the pipe. We have been able to dig up and repair leaks before they became main breaks. This is an ongoing program.

The Water Master Plan targets surveying the entire water system in a three-year cycle.

Dave Ebersold: I just assumed you still have your question.

Speaker #6: I was looking at that busted pipe and I was thinking, is there a new material or new technology that makes better pipes and what's cracking all the time?

Ernie Lau: I wish there was a perfect pipe that did not break and lasts forever. A lot of our pipes in the system is metallic. With a metal pipe like this, there are problems with corrosion.

This is an actual piece of 36-inch diameter transmission pipeline from a tunnel between Kalama valley and Hawaii Kai. It failed recently and this is a section that Mike and his crews cut out where it blew out.

In this metal pipe, you can see corrosion. It is a problem with metal pipe. So, we've also explored other materials like plastic. Plastic pipe does not have problems with rust like this but it is a very delicate material. If it is not installed carefully and handled very carefully, it can fail, sometimes catastrophically, where it will crack for 20 feet. We have to dig a big hole to take it out of the ground. We have had problems with these.

We need to work on looking at different materials. There are new types of plastic pipe being developed, which we are going to explore. Maybe someday, there'll be a perfect pipe that doesn't break. Then we can put them in ground.

There is something called high-density polyethylene (HDPE). It is black and very thick-walled. It is not a perfect material either. We have used

some of it in our system, and from what we have seen, it also needs careful design and careful installation. It has its own shortcomings.

Thank you, sir.

Dave Ebersold: Any other questions?

Speaker #10: Thank you. My question is, since we do see the water rates on our current bill, which used to be quarterly then monthly, can you ask the environmental department to provide rates for the sewage also so we could give you guys some relief and bug them?

Ernie Lau: About 80 plus percent of our customers have the BWS water bill and the ENV's sewer bill on the same bill. Sewer charges are clearly marked that they are from a different department. But people have trouble distinguishing that. Usually, if your water bill is like mine, your water charges are going to be about one-third of the sewer portion of the bill.

So, yeah. Good point. I will pass it along to the director of ENV. Thank you.

Dave Ebersold: Let me take a survey in the room. Besides you sir, who else has additional questions?

Speaker #11: Hi. My question is with regards to water conservation. With the rates that you proposed, if we are effective in our water conservation, does that affect the revenue that you bring in by changing the rates?

Ernie Lau: Yes, it does. This is Joe Cooper. He is our Water Works Controller. He is an accountant, a CPA, and for him, the less water people use, that means lower revenues for us. So, conservation does affect revenues because our primary revenue is people paying for water they're using. So it's little tug-of-war that goes on.

We are trying to push conservation. At the Board of Water Supply, we are all committed to do that because we have a finite fresh water resource that might be diminishing over time because of rainfall changes. And yet, it causes us to have lower revenues.

So, we want to do a couple of things. We want to continue to try to become more efficient in our operations so we can try to operate with less and do the same job with less. We are always looking for efficiencies in all the work or divisions.

But also, there are times where we're going to have to increase water rates to make sure we have enough to operate and continue to invest at the appropriate rate into our water system infrastructure. So, good point.

Water conservation does create less revenue but we feel that we want to empower our customers – that is you folks – with the ability to have more control over your water bill. Not the sewer portion but the water portion through conservation because ultimately, we have to try to live within the water resource capacities that we have on this island to support a growing community over time.

And like Barry said, conservation helps us defer expensive new wells in the system. It is actually a very cost-effective thing to do. And it's the right thing for our community. Thank you.

Dave Ebersold: To you, sir, and then we will come to you in the back.

Speaker #6: I remember there was a lot of money spent for a study about the Stairways to Heaven property. Some of you are saying you don't really need that parcel. Why don't you just get rid of it?

Ernie Lau: I know we are talking about water rates, but I can answer a quick question about Haiku Stairs. I think you're referring to Haiku Stairs, the "Stairway to Heaven" that has almost four thousand steps up to the top of the ridge.

Unfortunately, it ends up on our parcel. I have, for a number of years now, attempted to transfer that parcel with the stairs to another agency. We are going through an EIS (Environmental Impact Statement) process because managing and maintaining stairs is not our core mission of providing drinking water to our community and it drains our resources.

The proposed action in the EIS is actually for the removal of the stairs. But we are looking at different alternatives and hopefully as we go through this EIS process, someone or some agency will step forward to take the stairs off our hands because we want to focus on our core mission of providing drinking water for our community.

Has anybody here been up the Stairway to Heaven? How was it?

Speaker: Steep.

Ernie Lau: It is steep and it is dangerous and I want to stress, it is closed. It is illegal to go up or come down the Stairway to Heaven.

The Coastguard used to manage that facility part of the Omega station. You folks must have been in great shape because you have to go up 4,000 steps over 2,700 feet of elevation to climb to the top.

Again, illegal. Closed. And it'll be trespassing if you go up and you're caught. Thank you. And thank you for your service, sir.

Dave Ebersold: Question in the back.

Speaker #12: How do you arrive at the numbers you project for future rainfall?

Ernie Lau: I will let Mr. Usagawa again come up and help with that question. That is a very good question.

Barry Usagawa: There are two ways to forecast rainfall. One is to look at historical trends. From 1990 to 2010, Oahu experienced about a 10 percent reduction in rainfall but that is just over a short period. If you go back a century, rainfall has been decreasing slightly.

But because of climate change, you cannot really rely on past trends; future conditions would change as the atmosphere temperature rises because of greenhouse gas emissions. It will get the ocean warmer and that would change the climate patterns in the future.

We engaged the University of Hawaii to do some modeling for us to 2050, 2080 and 2100, to see what would be the range of possibilities of rainfall. They have actually taken these supercomputer type global climate models and scaled them down to watershed level.

Depending on the model they used, what they found was a range of as much as 70 percent less rainfall in the Waianae areas. The Leeward areas will be drier in that future and it will be drier overall on the island. If that is the future, we expect to have lower sustainable yields in our aquifers and lower water levels and it'll be a challenge to actually maintain current water use.

We are evaluating that now. Research is continuing to advance but that's the most conservative view.

In the other modeling future, they see certain areas like Windward and upper Honolulu getting wetter. Leeward would be drier but not as dry. And so, how is that? In a warmer climate, you get increased evaporation. In a warmer atmosphere, you can retain more moisture.

So to me, it simply is whatever goes up has got to come down. And when it comes down, you'll have droughts in the future and less rainfall. But when it comes down, it's going to come down in buckets. So that is why, in the future, they expect more severe droughts and more severe floods.

How do we actually fold those projections into the resources and into the infrastructure that we use to provide safe drinking water today? It is a challenge. That is why a diversified system that includes recycled water, some desalination and groundwater sources is necessary.

Groundwater is the most plentiful. We use 100 percent groundwater in our system. It is naturally filtered and high quality.

But if in the event that starts to deplete, it actually points more to the importance of conservation. So, we need to get more efficient so that we can ride out those periods of drought in the future and capture the storm water that does fall and find a way to naturally recharge the aquifers.

It is a complex problem but the solution is a number of different strategies. And together, we can try to sustain ourselves in that future.

Dave Ebersold: Any other questions? You'll ask the final question for the evening and then we'll move on to public comment.

Speaker #6: I noticed you got bonds proposed to fund half of the costs. How to these bonds seem to affect the overall rates and things? How do you pay back the bonds?

Ernie Lau: We will be paying back the bonds from revenue collected from our water customers. That will pay for the debt service. But bonds basically help spread the cost over time. We have to pay interest but it spreads the cost over time. If we were to just use revenue from customers to pay for things, it will be very expensive to afford the capital program.

Investing in the water system is not a steady line. Costs go up and down depending on the types of projects we have to do. So, to smooth it out, we're going to float revenue bonds. We're also going to use State Revolving Loan funds, or drinking water SRF funds, which have very low interest rates.

This year, for repairs of two of our dams, we went to the state legislature for what they call Special Purpose Revenue Bonds. These are issued by the State, hopefully at a cheaper interest rate than if we were to sell the bonds ourselves.

Thank you.

Dave Ebersold: Great questions.

<u>PUBLIC TESTIMONY</u>

Dave Ebersold: Now we're going to move in to the period for public comments. This is different from what we did with questions and answers. We're going to be taking testimony, recording it, compiling it with other testimony we get from the other public hearings. We will then respond to the testimony more formally on the Board's website. This will be done in a very public fashion that's shared with everybody.

If you would like to provide testimony at this point, now is the time to do it. I will remind, you can also do so in writing or on the website. I understand that Speaker #13 would like to provide some testimony.

Speaker #13: No. I will submit mine in writing.

Dave Ebersold: Okay. Thank you.

Speaker #14, if I could ask you to limit your time to about three minutes.

Speaker #14: First of all, I got no bone to pick with the water service. They have been providing me with water, a good quality drinking water for a long time. I do object to the 20 percent rate increase over four years. I think it is excessive, unwarranted and then unfair.

I also object to single-family homes being charged a higher rate or higher increase than others. I think single-family homes, as evidenced by the chart in the back, which is all the yellow dots all around the island, single-family homes are more efficient users of our water supply. They are very conscientious and eager to conserve water. We do at our home and many of my neighbors do too.

I think Mr. Ebersold was referring to the rate increase to being modest – there was 20 percent. Then here we have had much less than three percent inflation over the last 10 years. 20 percent is excessive. Any increase in the cost of living in the Hawaii, whether it is a rate increase or tax increase, is very difficult for the people.

We also already have a lot of homeless people because they can't afford to live here. This just exacerbates the situation. So, I'm opposed to the rate increase. I'm also opposed to the changing the 13,000 level down to the 2,000 and 6,000 and it gets too sharpened decrease. I think something like a 3,000, 10,000 will be more reasonable. Thank you.

Dave Ebersold: Great. Thank you for your comments.

Anyone else that would like to take the opportunity for public testimony?

With that, this closes the formal part of our meeting. We are going to be around for a little while longer. I encourage you to take the opportunity to look at the Board's additional information. Ask questions, our staff will be here for a little while.

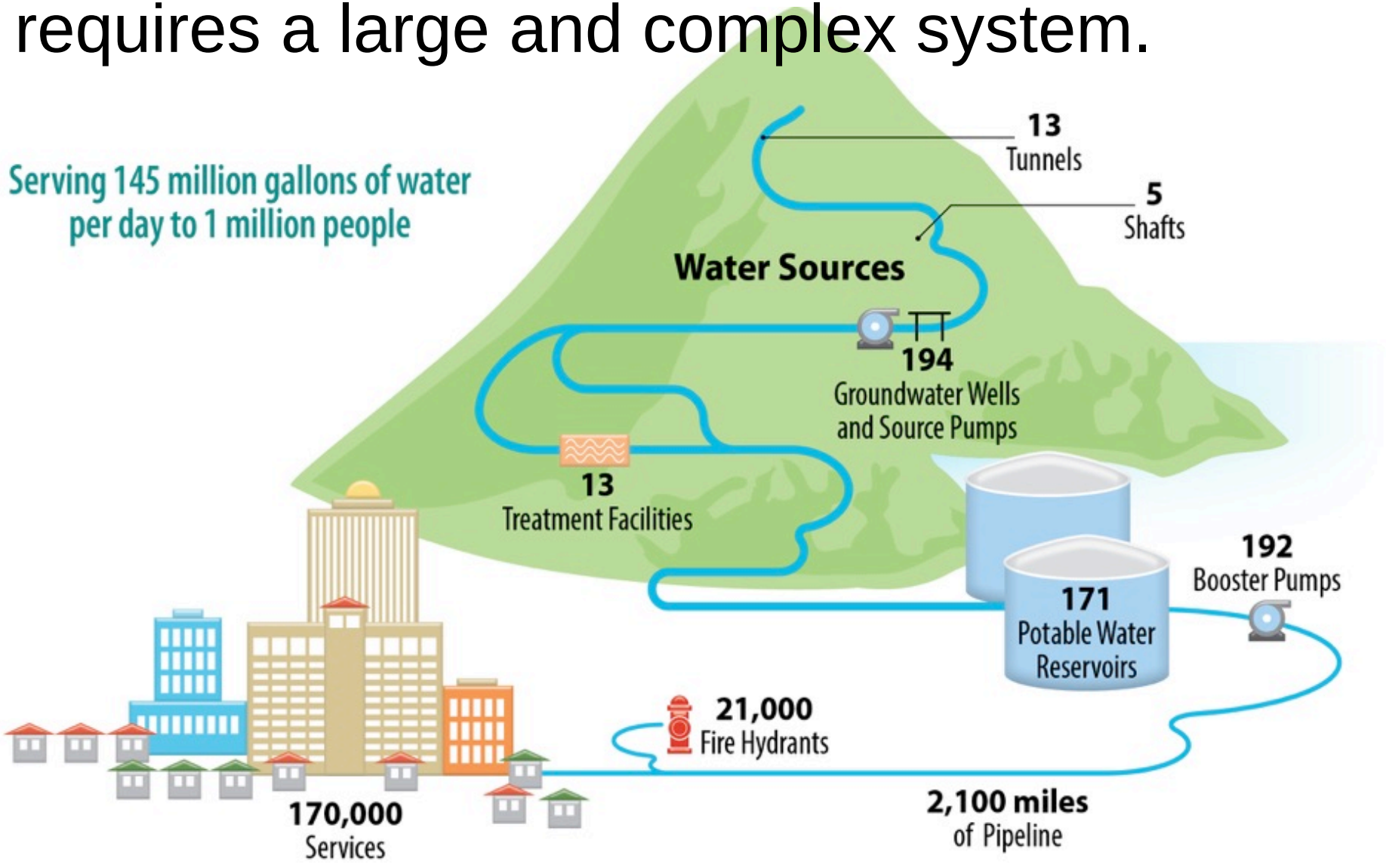
I especially want to thank you all for taking the time out of your evening to come out to join us to learn what's going on and to provide your input and ask your questions.

Thank you all very much.


Ka Wai Ola
All life depends on water
Board of Water Supply
City and County of Honolulu


The Board of Water Supply (BWS) delivers
safe, dependable, affordable water
to your tap ...
… every minute of every hour
of every day.

Delivering water from underground water sources to your home requires a large and complex system.



Are we prepared to provide safe, dependable, and affordable water for the next generation?

The BWS Water Master Plan …

… Looked ahead 30 years

… Evaluated the entire water system

… Identified necessary improvements

… Balanced needs with costs of providing water to our customers

Here are some of the findings of the Water Master Plan.

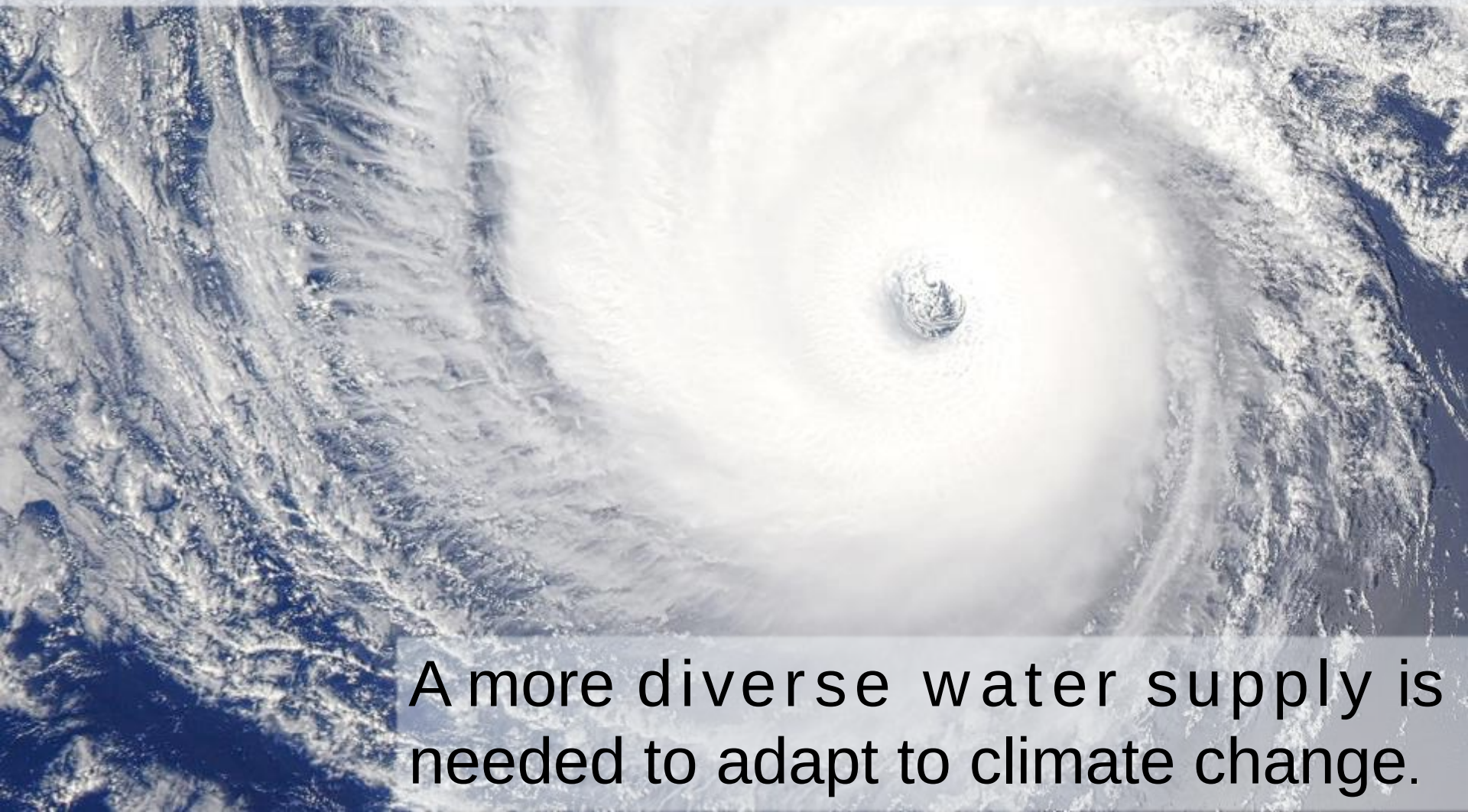
Finding: We need new drinking water supplies for Ewa, Waianae, and Honolulu.

Finding: We have sufficient pumping capacity today, but we need additional backup pump capacity.

Finding: BWS pipelines suffer deterioration from age, corrosion, and soil, leading to more than 300 water main breaks per year.

Finding: Oahu cut its daily water use by 30 gallons per person since the 1990s, saving over 12 million gallons per day, but we still need to do more.

Finding: We expect rainfall to decrease in West Oahu, but the intensity of storms to increase.



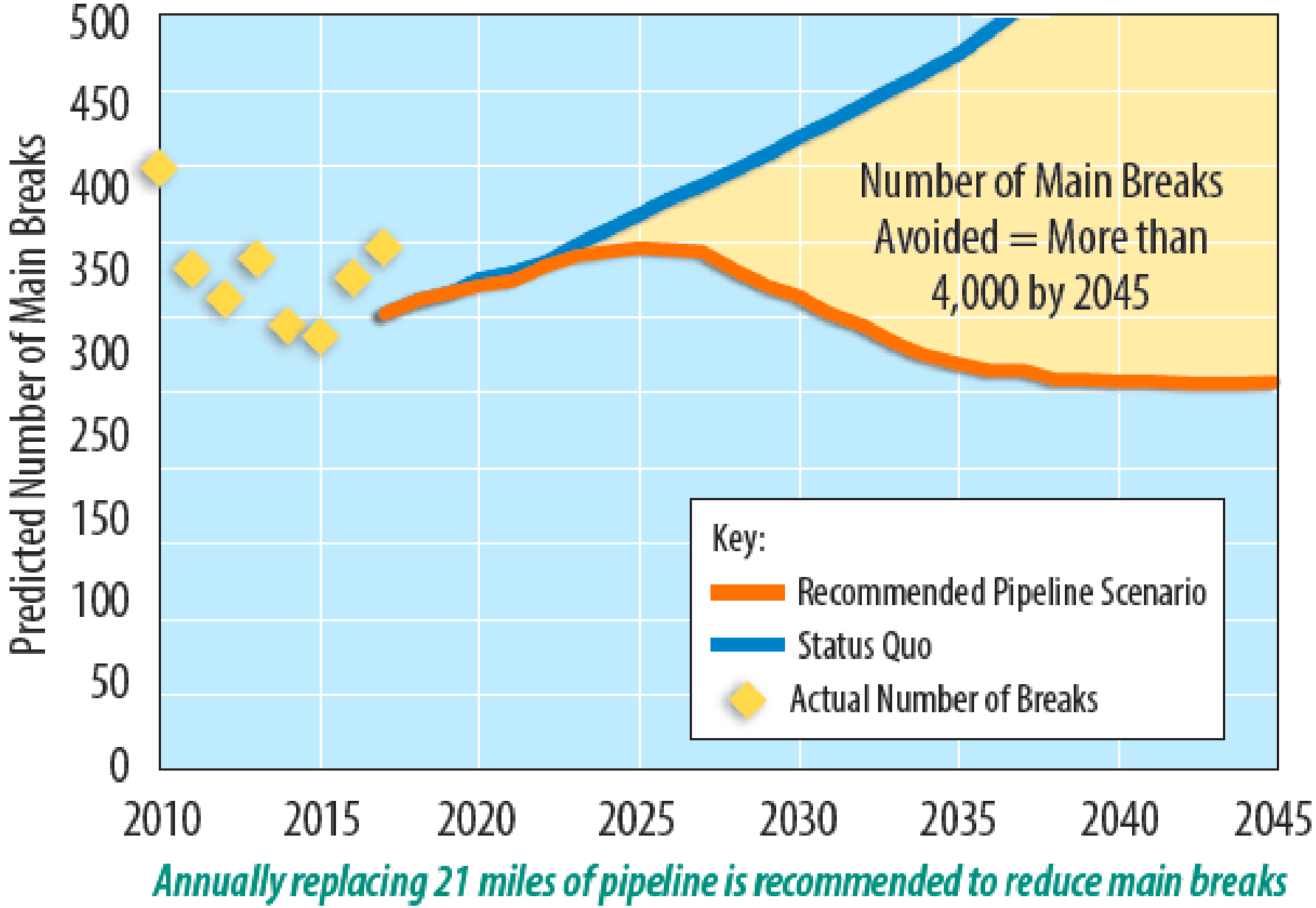
A more diverse water supply is needed to adapt to climate change.

Finding: Healthy watersheds are necessary to sustain our water supply over the ages and require care and conservation.

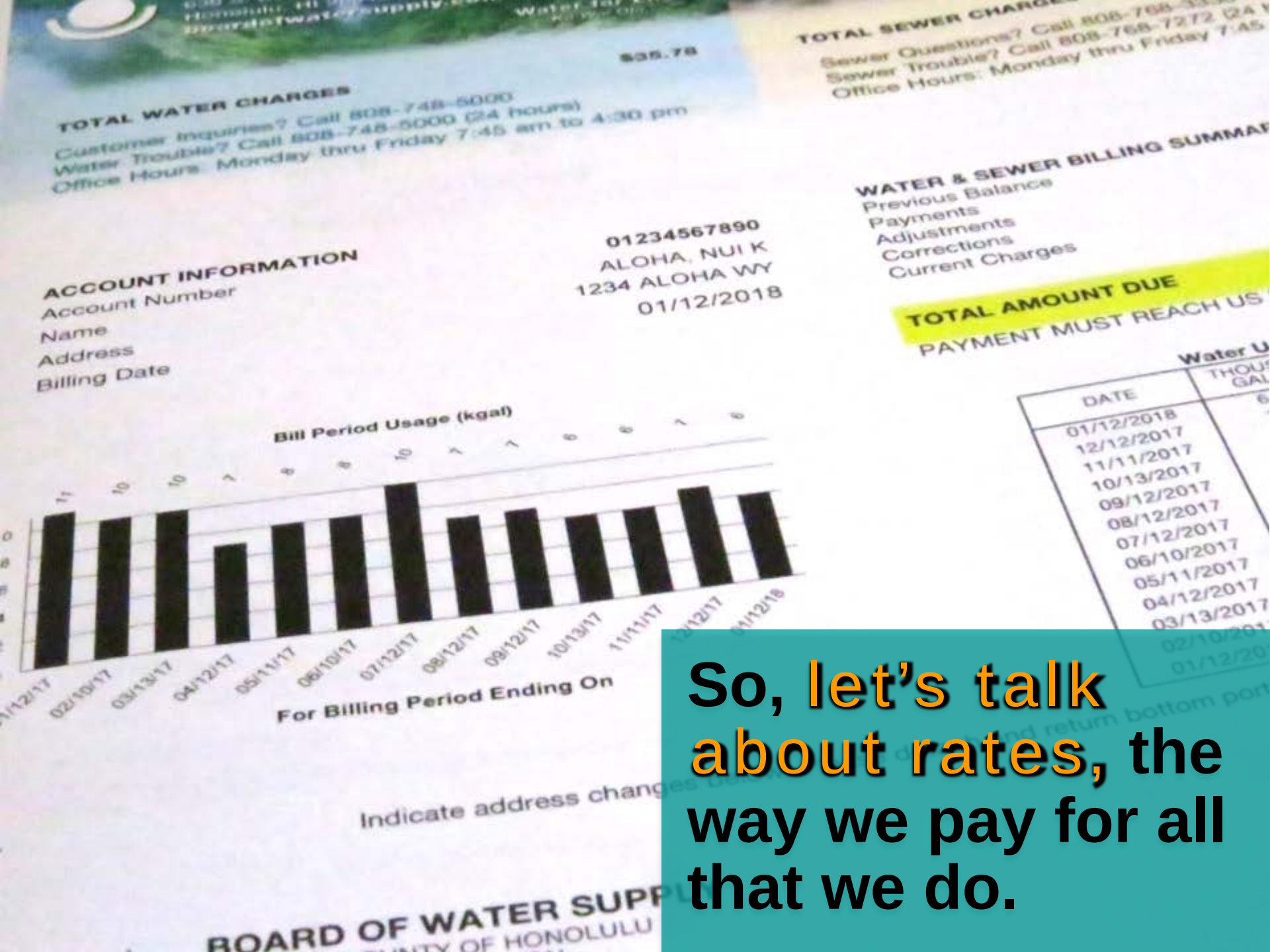
Over the next 30 years, BWS will invest in 800+ infrastructure projects island-wide, with total costs above $5.3 billion.

Over the next 10 years:

Results	Investment
Reliability and resiliency of our water system will increase	**$511 million**
The number of main breaks will go down	**$876 million**
Increased investments in conservation will preserve existing supplies and delay the need for new ones	**$3.4 million** (per year, 4% of infrastructure investments)
Targeted funding for watershed protection will help us adapt to a changing climate	**$3.4 million** (per year, 4% of infrastructure investments)



Annually replacing 21 miles of pipeline is recommended to reduce main breaks



So, let's talk about rates, the way we pay for all that we do.

Remember – We're Just Talking about Water Rates

Water rates are proposed for a 5-year period beginning in July 2018 through 2022.

There would be no increase until July 2019.

Increases are expected to generate about an additional $60 million over that time.

Board of Water Supply
City and County of Honolulu

This is what BWS is committed to do with new rates

- Raise rates gradually
- Provide a low cost "Essential Needs" tier that rewards conservation
- Encourage conservation by highest water users
- Address subsidy of single-family residential by multi-unit residential customers
- Everyone pays their fair share

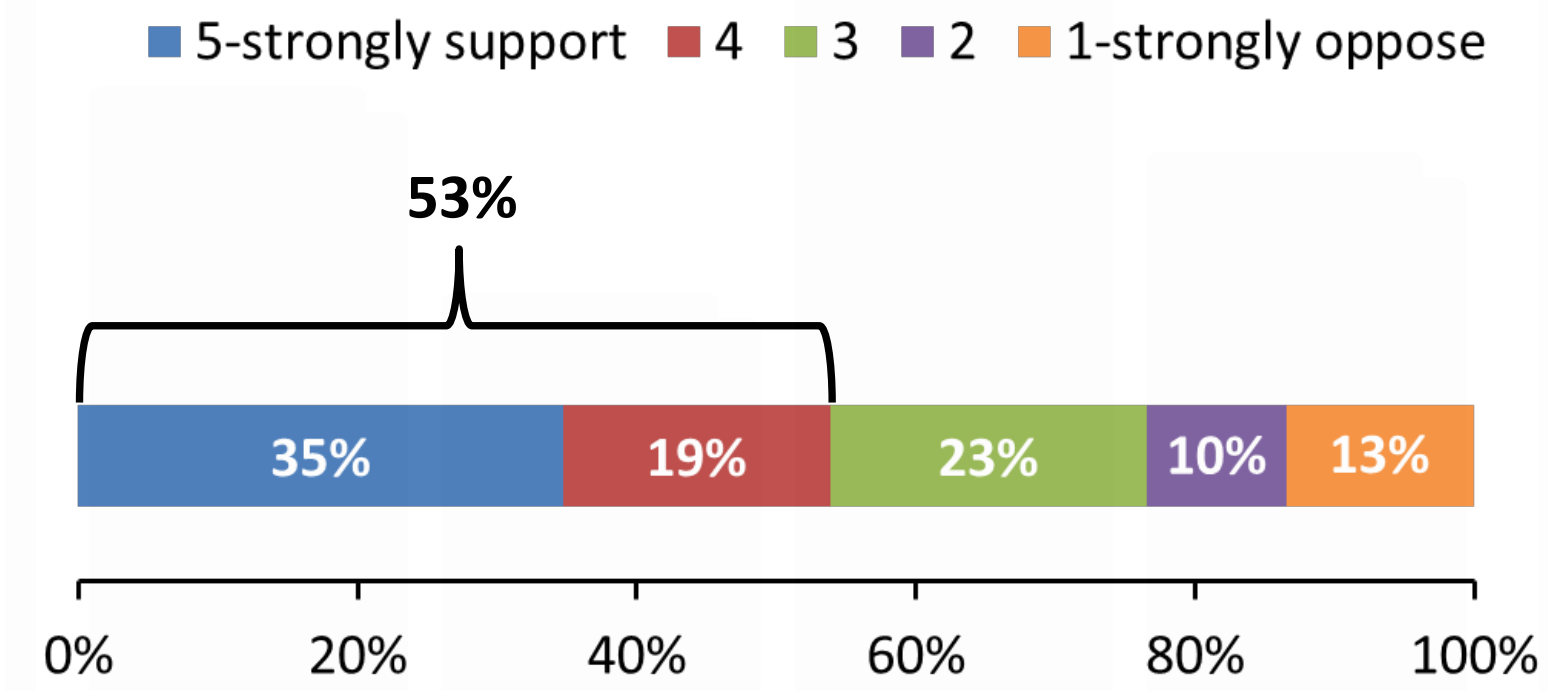
New: Essential needs tier

Below-cost rate for first 2,000 gallons per month.

All residential customers get this rate.

10% of BWS residential customers use 2,000 gallons or less.

Over half of our customers support adding a new tier with a very low rate to ensure affordability and reward conservation.



New: Adjust tiers to financially motivate water conservation.

Monthly customer charge – Based on water meter size

Proposed Monthly Customer Charge (per meter)

Meter Size	Proposed Monthly Customer Charge in $ / Month – Effective Dates					
	Current	July 2018	July 2019	July 2020	July 2021	July 2022
5/8-inch or 3/4-inch*	$9.26	$9.26	$10.42	$10.80	$11.38	$12.09
1-inch	$9.26	$9.26	$13.31	$13.79	$14.45	$15.28
1-1/2-inch	$9.26	$9.26	$15.23	$15.78	$16.50	$17.41
2-inch	$9.26	$9.26	$38.81	$40.18	$41.61	$43.45
3-inch	$9.26	$9.26	$47.95	$49.64	$51.35	$53.55
4-inch	$9.26	$9.26	$91.74	$94.95	$97.98	$101.92
6-inch	$9.26	$9.26	$163.91	$169.63	$174.84	$181.64
8-inch	$9.26	$9.26	$250.03	$258.76	$266.57	$276.78
12-inch	$9.26	$9.26	$541.31	$560.18	$576.78	$598.53

*** Typical for single-family residential customer.**

Single-family residential water rates 2018 - 2022

	Existing		Proposed Rates, Effective Dates					
Tier	Gallons/ du/month	Rate	July 2018	Gallons/ du/month	July 2019	July 2020	July 2021	July 2022
EssN	0 to 13,000	$4.42	$4.42	0 to 2,000	$3.79	$3.91	$4.17	$4.46
1				2,001 to 6,000	$4.46	$4.60	$4.90	$5.25
2	13,001 to 30,000	$5.33	$5.33	6,001 to 30,000	$5.06	$5.20	$5.50	$5.85
3	More than 30,000	$7.94	$7.94	More than 30,000	$8.46	$8.60	$8.90	$9.25

EssN – Essential needs
Rates are in $ per thousand gallons
du – dwelling unit

Comparing bills – Essential Needs – 10% of Single-family residential

Essential Needs Tier – The Low Water User
(2,000 gallons per month)

Current Bill	Future Bill at Proposed Rates				
	July 2018	July 2019	July 2020	July 2021	July 2022
$18.10	$18.10	$18.00	$18.62	$19.72	$21.01

Comparing bills – Median water user – 50% of Single-family residential

The Median Water User (6,000 gallons per month)

Current Bill	Future Bill at Proposed Rates				
	July 2018	July 2019	July 2020	July 2021	July 2022
$35.78	$35.78	$35.84	$37.02	$39.32	$42.01

Comparing bills – Average water user Single-family residential

The Average Water User (9,000 gallons per month)

Current Bill	Future Bill at Proposed Rates				
	July 2018	July 2019	July 2020	July 2021	July 2022
$49.04	$49.04	$51.02	$52.62	$55.82	$59.56

Comparing bills –
High water users – top 3% of Single-family residential

The High Water User (35,000 gallons per month)

Current Bill	Future Bill at Proposed Rates				
	July 2018	July 2019	July 2020	July 2021	July 2022
$197.03	$197.03	$199.58	$204.82	$215.82	$228.66

Multi-unit residential water rates 2018 - 2022

	Existing		Proposed Rates, Effective Dates					
Tier	**Gallons/ du/month**	**Rate**	**July 2018**	**Gallons/ du/month**	**July 2019**	**July 2020**	**July 2021**	**July 2022**
EssN	0 to 9,000	$4.42	$4.42	0 to 2,000	$3.70	$3.71	$3.72	$3.77
1				2,001 to 4,000	$4.35	$4.36	$4.38	$4.43
2	9,001 to 22,000	$5.33	$5.33	4,001 to 10,000	$4.95	$4.96	$4.98	$5.03
3	More than 22,000	$7.94	$7.94	More than 10,000	$5.90	$5.91	$5.93	$5.98

EssN – Essential needs
Rates are in $ per thousand gallons
du – dwelling unit

Non-residential water rates 2018 - 2022

Current	Proposed Rates, Effective Dates				
	July 2018	July 2019	July 2020	July 2021	July 2022
$4.96	$4.96	$5.01	$5.06	$5.16	$5.27

Rates are in $ per thousand gallons

Examples: hotels, restaurants, government, shopping centers, hospitals, retail

Current subsidies will be continued

Lower rates for
local agriculture

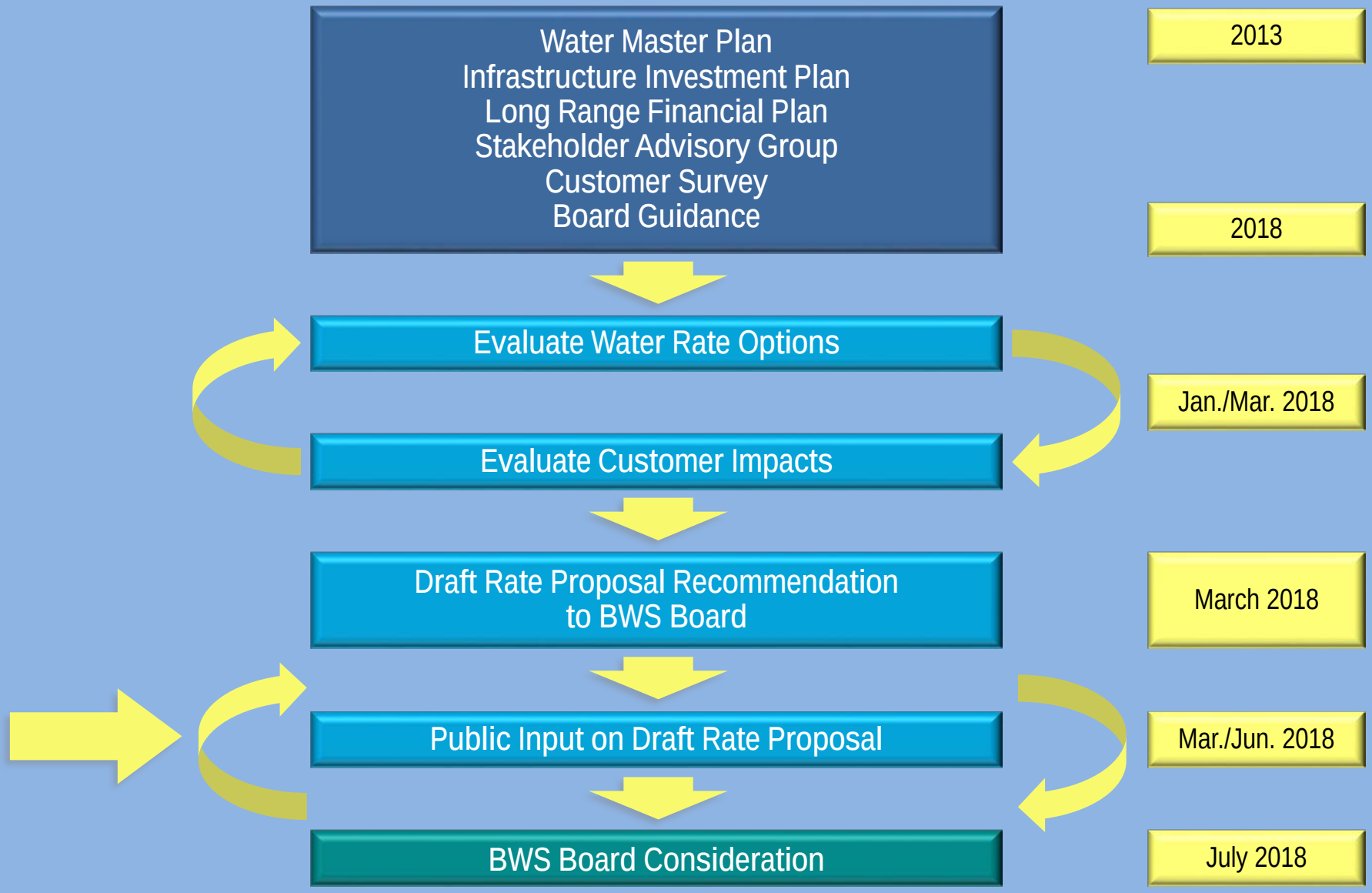
and recycled water

And new fee waivers

Other BWS charges:

- **Fire Meter Standby Charge**
- **Standby Charge** (emergency interconnections)
- **Water System Facilities Charge**
- **Environmental Regulations Compliance Fee Cost Adjustment**
- **Power Cost Adjustment**

Process Overview



Learn More at a Public Hearing Near You

All Hearings: 6:30 – 8:30 PM	
Honolulu	Thursday, April 26 ***Mission Memorial Auditorium*** 550 South King St., Honolulu 96813
Kapolei	Monday, May 14 ***Kapolei Hale, ground floor conference room*** 1000 Uluohia Street, Kapolei 96707
Kaneohe	Tuesday, May 15 ***Benjamin Parker Elementary School Cafeteria*** 45-259 Waikalua Road, Kaneohe 96744
Mililani	Thursday, May 24 ***Mililani Recreation Center #5*** 95-1101 Ainamakua Drive, Mililani 96789

Give Your Input on Proposed Rates

Send a letter or an email to:

Board of Water Supply

Attn: Proposed Water Rates

630 South Beretania, Honolulu 96843

Email: contactus@hbws.org

JUNE 30, 2018

Questions?

Call: (808) 748-5041

BWS Website: www.boardofwatersupply.com

Twitter: @BWSHonolulu

Facebook: http://www.facebook.com/BWSHonolulu


Questions?