



**Honolulu Board of Water Supply
Stakeholder Advisory Group**

Meeting 18 Wednesday August 09, 2017 4:00 to 6:30 pm

Neal S. Blaisdell Center, Hawaii Suites
777 Ward Avenue, Honolulu, HI

Meeting Notes

PURPOSE AND ORGANIZATION OF MEETING NOTES

The purpose of these notes is to provide an overview of the Board of Water Supply (BWS) Stakeholder Advisory Group meeting. They are not intended as a transcript or as minutes. Major points of the presentations are summarized herein, primarily for context. Copies of presentation materials were provided to all participants and are available on the BWS website. Participants made many comments and asked many questions during the meeting. These are paraphrased to be more concise.

ATTENDEES

There were 14 stakeholders present in addition to BWS and CDM Smith staff, as well as BWS Board Chair Bryan Andaya. The stakeholders represent diverse interests and communities island-wide.

The following Stakeholders Advisory Group members attended:

- | | |
|------------------|---|
| Matt Bailey | Aqua-Aston Hospitality |
| Pono Chong | Chamber of Commerce Hawaii |
| Mark Fox | The Nature Conservancy of Hawaii |
| Shari Ishikawa | Hawaiian Electric Co. |
| Will Kane | Mililani Town association |
| Gladys Marrone | Building Industry Association of Hawaii |
| Helen Nakano | Resident of City Council District 5 |
| Robbie Nicholas | Resident of Council District 3 |
| Dick Poirier | Resident of Council District 9 |
| Elizabeth Reilly | Resident of Council District 4 |
| John Reppun | KEY Project |
| Cynthia Rezendes | Resident of Council District 1 |
| Chris Wong | Resident of City District 7 |
| Cruz Vina Jr. | Resident of Council District 8 |

MEETING AGENDA

- Welcome
- Public Comment on Agenda Items
- BWS Updates
- Accept Notes from Meeting 17
- Preview Initial Results of Financial Modeling of Pipeline Scenarios and Provide Input on Communicating With the Public
- Summary and Next Steps

WELCOME

Dave Ebersold, meeting facilitator and Vice President of CDM Smith, welcomed the group and outlined the meeting objectives. He said breakout groups will discuss two sets of questions about pipeline scenarios and public outreach and messaging. Dave pointed out posters lining the walls of the room and explained that they would be used in the breakout discussions.

PUBLIC COMMENT ON AGENDA ITEMS

None.

ACCEPTANCE OF NOTES FROM MEETING 17

Through consensus, the group accepted notes from the prior meeting.

BWS UPDATES

Dave introduced Ernest Lau, BWS Manager and Chief Engineer, for updates on BWS programs and issues. Ernest welcomed the group and said that he is very happy to be back. He missed everyone while he was away and is looking forward to seeing the progress that the group has made.

Ernest discussed a recent 12-inch water main on Vineyard Boulevard. The area initially experienced significant traffic impacts but they were quickly resolved. Ernest thanked Mike Fuke for working to get the pipe fixed so quickly and Kathleen Pahinui for communicating well with the public and media. He also recognized the excellent coordination between DOT, DTS transportation services, HPD and BWS.

Ernest then informed stakeholders about the Red Hill Navy fuel tank meetings that will take place on island in the next week. He said that BWS is participating an additional meeting that will take place in San Francisco at EPA Region 9 Headquarters at the end of the month. He said that the BWS remains committed to moving the process along and protecting our water resources.

Ernest said that the BWS had a plant sale at the Hālawā Xeriscape Garden on Saturday. This event is held every year in August. This year's plant sale had the highest attendance in 10 years.

Ernest concluded by thanking the stakeholders for volunteering and staying with the BWS.

INITIAL RESULTS OF FINANCIAL MODEL OF PIPELINE SCENARIOS AND STAKEHOLDER INPUT

Dave began the presentation about the Financial Model of pipeline scenarios by reviewing some of the important rate development process points that have been discussed at previous meetings. The BWS is preparing a 30-year long-term financial plan, which matches the time frame of the 30-year planning horizon of the Water Master Plan (WMP). He explained that the BWS is using a window of 10 years in the financial planning forecast model because that timeframe provides a relatively high degree of certainty.

Dave asked the group to recall that nearly all the revenue that is needed to fund BWS functions is from customer charges. He said major components of the process of establishing rates include:

1. Determining the revenue requirement (“size of the pie” analogy) and this is what the group will focus on today while looking through the financial model results.
2. Cost of service.
3. Rate design.

Dave then talked about assumptions and key information related to projected water sales, projected operations and maintenance expenses, reserves and working capital, and trends/risks.

Projected Water Sales – In financial modeling, the planners looked at several things related to the volume of future water sales.

- The amount of water that BWS anticipates selling is based on the demand forecast in the Water Master Plan (WMP). Dave pointed out that future sales of water could potentially be reduced by increasing conservation measures and by economic cycles.
- The financial model assumed a modest annual increase of 0.1% in water sales per year. This is a conservative number – about half of what is forecast in the WMP.
 - The WMP ensures that the infrastructure is sized large enough so the water demand forecast is higher. In the financial modeling, the goal is to make sure that we don't assume that there's more money coming in or more water being sold than actuality, so the forecast is lower.

Projected Operations and Maintenance Expenses – The financial model considered several factors related to operations and maintenance, improvements and system growth. As discussed in previous meetings, all revenue from the BWS customers goes towards operations, improvements and growth of the water system. Fixed charges are for operations and maintenance expenses, employee salaries, debt service.

The BWS saw that 2017 operating expenses were less than projected, and actual costs came in under budget. Available funds were redirected to the Capital Improvement Program (CIP) for FY 2018 so more projects could be undertaken. Moving forward, the BWS has implemented more rigorous efforts for budgeting. This includes addressing limitations in hiring capacity, aligning budgeting more closely with expected cash flows, and directing more money to the CIP. The FY 2018 budget adopted by the Board reflects this.

Dave told the group that the following assumptions were made for operations and maintenance:

- The model used actual costs from FY 2016, and the preliminary actual costs for FY 2017.
- For FY 2018 and other future years, the model assumed a 4% annual increase over the FY 2017 actual costs. BWS Division Managers provided detailed budgets for the next six years. An escalation factor of 4% annually takes into account all of the things that they are planning to work on.

Reserves In Working Capital – In May 2017, the BWS Board adopted updated financial policies recommended by the Stakeholder Advisory Group. Those updated policies were used in the financial model. The model took into account the target of having 180 days of cash on hand within about 10 years and never having less than 60 days cash on hand. This provides some flexibility to be able to deal with extraordinary circumstances, short-term changes in cost of electricity, and other things. If the BWS accrues 180 days of working capital sooner than 10 years, that's fine but a slow ramp up will have a lower impact on rates.

Trends and Risks – Conservation and climate change were largely addressed in the water master planning process. The WMP recommended directing a certain amount of the CIP budget to help fund BWS conservation and sustainability initiatives. There's still the task of *actually* building that into operating budgets each year.

The issue of climate change is an important consideration over the long-term but it can be difficult to forecast all of the potential impacts. Climate change impacts are anticipated beyond the 30-year horizon so they are not addressed in the financial model, yet.

Preview of Financial Modeling of Pipeline Scenarios for 30-Year Capital Improvement Program (CIP)

Dave directed the group's attention to posters of the modeled pipeline scenarios on the walls of the room. He said that stakeholders would use these posters to discuss seven pipeline scenarios and financial model results, and will provide input or a recommendation today.

He said that all of the seven scenarios include:

- Completing high priority non-pipeline projects that were identified in the WMP within 10 years.
- Projects needed to meet growth needs. The timing of these is anticipated to be as needed, based on actual increases in demand.

The only things that vary in each of the seven scenarios are the rate and amount of pipeline replacement. The scenarios were designed to replace 21 miles of pipe per year, with different paces of ramping up to that from the status quo of 6 miles per year.

Dave described each of the seven scenarios for pipelines (PL). He first gave an overview of the scenarios and then discussed ways to compare them.

PL1 is called the **Status Quo** and reflects what the BWS is currently doing – replacing about six miles of pipeline a year. This scenario can also be used as a basis of comparison.

PL2 is called **Ramp Up To 1%**. It assumes ramping up to replacing 1% of the 2,100 miles of pipe in BWS's system (21 miles) over the next decade or so. Replacing 21 miles of pipeline takes significant effort and the ramp up pace must be considered for feasibility. If we ramp up too fast, numerous factors like permitting, BWS staff capacity, and external resource availability, could impact delivering projects on time. A steep ramp-up would place a tremendous burden on rates.

PL3 is called **Reduce Main Breaks**. This scenario was developed prior to the main break model forecasting when we thought that this would be the only option that could effectively reduce main breaks in the short-term future. After the model was developed we learned that there would be more options to choose from but we kept the original name to avoid confusion. The scenario would ramp up to about 28 miles of pipeline replacement a year in the beginning and then settle down around 21 of miles each year. This is a more aggressive scenario for replacing pipelines.

PL4 is called **Target 300**, meaning the scenario was designed to replace pipelines at a rate such that the overall system would have about 300 main breaks per year. The number was targeted because that's about the national average for a system of this size, and it is consistent with the target in the Water Master Plan.

PL5 is called **Slow Ramp Up**. This scenario would slowly ramp up the rate of pipeline replacement from 6 miles to 21 miles per year over a 30-year period.

PL6 is called **Step-Wise Increase**. In terms of dollars spent on pipeline replacements, this scenario takes a step-by-step approach. The number of miles replaced would be similar to PL5 initially, and then diverges. In combination with PL5, this is a hybrid scenario that stakeholders had asked to see modeled in previous meetings.

PL7 is called **21 Miles in 10 Years**. The scenario would ramp up the rate of pipeline replacement relatively quickly so that within 10 years, 21 miles of new pipe would be installed and in the ground annually. It is slightly more aggressive than PL2.

Dave explained that the CIP costs vary for each scenario. He showed two slides with CIP costs projected over 30 years. The first of the slides below showed non-escalated costs over that period. It also highlighted the 10-year period that was used in the financial model. The second of the slides below showed the 10-year financial modeling window and costs escalating 3% annually over that period. Cost differences among the seven pipeline scenarios become much greater over time as escalation reflects more realistic future CIP expenses.

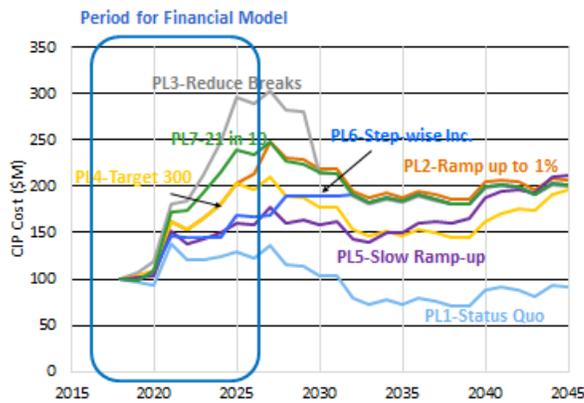
Highlights of comparing costs of the pipeline scenarios are shown below:

- PL1 is the least expensive in terms of CIP dollars. This status quo scenario would have the least amount of pipe replacement over 30 years, so the CIP cost associated with it is going to be the lowest.
- PL3 would have the fastest rate of pipe replacement in the early years, and would require as much as \$300 million a year for the period between 2025 and 2029 (or, about three times

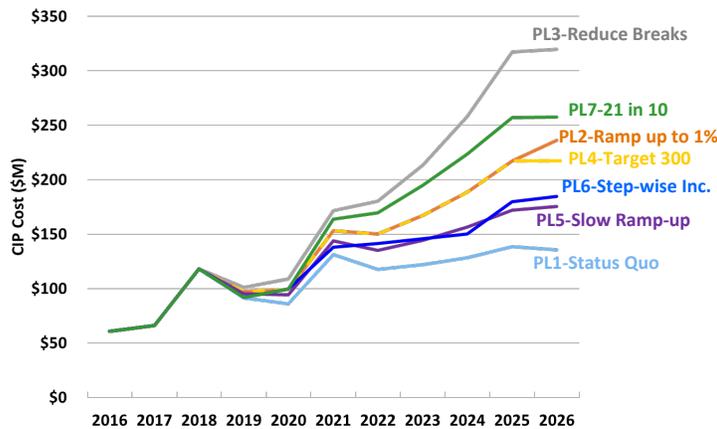
greater than this year's CIP budget). With escalation, that number would be around \$320 million annually. As you can see in the graph below PL3's projected costs would decline sharply by 2030 as more high-priority pipelines replacement projects are completed and the rate of pipeline replacement could be reduced.

- The other four scenarios fall in the mid-range of the rate of ramping up pipeline replacement as well as CIP costs. In the early years, these mid-range scenarios follow a very similar trajectory. After a few years, the projections diverge and significant cost differences appear.

CIP cost for each scenario (non-escalated)

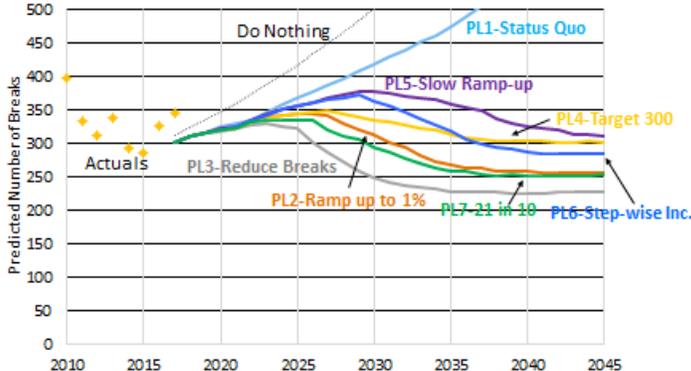


CIP cost for each scenario (escalated at 3% per year)



Dave discussed projected main breaks associated with the different scenarios. In the graph shown below, yellow diamonds indicate actual numbers of breaks in the past few years, and lines are projections for the scenarios for years after 2016.

Main break projections for each scenario



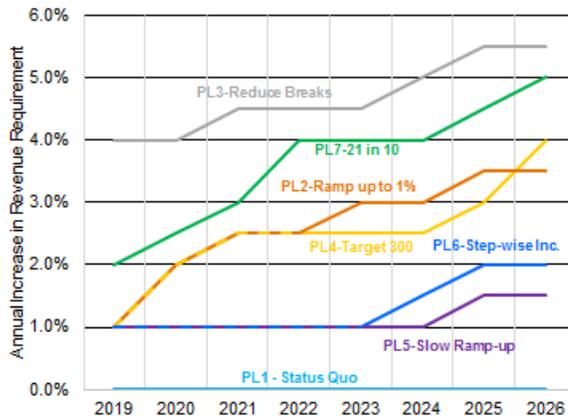
The number of main breaks is important for stakeholders to consider. Dave explained that there were 347 main breaks in the BWS system in FY 2017. Significant findings about water main break projections include the following:

- If the BWS were to continue with the status quo, replacing about six miles of pipeline a year, the number of main breaks will increase substantially. By the mid 2030s, the number of main breaks is projected to be up around 500 per year.
- When the BWS starts increasing the rate of pipe replacement, we expect main breaks to start to decrease.
- The WMP recommends replacing the highest risk pipelines first. The sooner those highest risk pipelines are replaced and out of the system, the sooner the number of breaks will drop.
- After a few years, all of the scenarios except PL1 would effectively reduce main breaks. In the early time period, the model suggests that breaks would continue to go up a little bit. The distribution system doesn't stay constant every day. It changes. Those dynamics are reflected in these scenarios. The more money spent on pipeline replacements and the sooner we replace the pipes, the bigger impact we can have on reducing main breaks.

Annual increase in revenue requirement for each scenario

Dave said the big objective of today's discussion is to try to come up with which of these scenarios makes the most sense for the BWS to implement. The financial model projected how much each scenario's revenue requirement would have to increase annually. The results are shown in the graph that follows.

Annual increase in revenue requirement for each scenario



Highlights of findings are summarized below:

- PL1 *Status Quo* wouldn't need a revenue increase at all, even with operations expenses going up at about 4% a year. The reason is that the financial model assumed that the BWS is going to use bond financing for half of the CIP costs. This is common to all of the pipeline scenarios.
- On the upper end, the scenario that would most aggressively replace miles of pipe and reduce main breaks is PL3 *Reduce Main Breaks*. Implementing that scenario would result in a 4% revenue requirement increase in 2019 and in 2020; a 4.5% increase in 2021 and again in 2022 and in 2023; a 5% increase in 2024; and a 5.5% increase in the last two years of the 10-year period. Those revenue requirement increases are cumulative and would compound every year. The cumulative numbers were shown in individual charts.
- All of the scenarios in the middle range (PL2, 4, 5, and 6) would replace pipelines at lower rates of ramping up. Predictably, these scenarios would result in lower increases in the revenue requirement.

What does that mean in terms of customers' average bills? Dave said that the percentages shown for increases in revenue requirement would be the impact to customers' average bill – IF ...

- ... If nothing changed in the current rate structure.
- ... No changes were made regarding cost of service, and who pays for different subsidies for agriculture, recycled water, and non-potable water.
- ... No changes were made to any of the tiers to encourage conservation.
- ... BWS didn't do anything for assistance for low-income customers.

He said that when we get to discussions about the rate structure, any changes we recommend are going to be on top of the change in revenue requirement – as increases or decreases for certain customers classes. He reminded the group that the BWS is going to be setting rates only for a five-year window. We don't want to set rates too far out into the future because of all the uncertainties.

QUESTIONS, COMMENTS, AND ANSWERS

Q. These scenarios indicate rate increases every year. Would the BWS consider not having a rate increase every year, but double up for a larger increase every other year? I'm not saying that's a good thing but would people tolerate a rate increase every single year? They may feel better about a bigger increase less often.

A. It's a great question. One of the things we did in coming up with these scenarios and figuring out how to balance them was to try and create really smooth lines so that they're predictable and that they're not jumping around. The other thing involves the compounding of money. Let's say you're planning to do a 1% increase in this year. If you push it off to the following year instead and say, "I'm going to do 2% the following year," it means that your next rate increase will have to be a little higher because you're losing that compounding of money that would have come from the initial rate increase that you postponed.

Q. Understood but what if you did a 2% increase in the first year?

A. Then we're working the other direction and building up too much cash – more than we need.

Q. I just am wondering if you asked your customers the question: "Would you rather have a 1% rate increase every year for six years? Or would you like to have it 4% now?"

A. That's a good point. We can work with this idea, and other questions like: what if we issued more bonds in this year and what does that do to rates? Absolutely.

Q: If you're doing a lot of construction work in one year or two years, and your target is 300 main breaks a year, what is the impact going to be on the people driving the roads?

A. That's a great question and that's an issue we will be working through with you. If we're replacing 21 miles of pipe a year, and if a pipeline project takes a couple of years to construct, there will be 40 miles of roads around the island torn up at any one time.

C. When you repair it or replace the pipeline, you don't always dig up the whole length of pipe in the road. You dig and then install the pipe and go on to another section. You don't dig up the whole road.

A. Yes. We limit the area to as small of an area as possible.

Q. Do you just drill horizontally?

A. There are some areas, like in congested intersections, where you would use that technique.

Q. Is there a graph that shows the increase in relation to the amount of water main breaks that would occur and what the value is? At some point, that's one of the questions in terms of value.

A. We have all of that on the side charts.

Exercise 1: Recommend pipeline scenario

Dave asked stakeholders to work with their designated breakout groups and talk through the modeled pipeline scenarios posted on each wall. Each group had 25 minutes to look through the scenarios and think through the following questions, and then report out to the full group:

- What overall impressions do you have of these scenarios, the increases, the main breaks?
- Should BWS increase its current rate of pipe replacement?
- If so, what scenario would you recommend and perhaps even more importantly, why?
- When you look at these scenarios, are there any that you would recommend against and why?

He said that if group members were not able to reach consensus on a recommended scenario or if there are differences in opinions, to include these details as part of the report out.

Breakout Group Reports

Group 1 – This group reported that they all agreed the BWS should increase the current rate of pipeline replacement.

Recommendations for:

- In terms of recommended scenarios, they agreed upon PL6 *Step-wise*, in part because it would provide a stable increase in pipeline replacement over a long period of time.
- Also, PL6 would have a high feasibility of implementation and a medium shift of burden to future generations.
- It seemed to the group that this scenario would provide a good balance of getting to the goal of 21 miles of pipe replacement per year without breaking the bank either at the front end or at the back end.

Recommendations against:

- Scenarios the group would recommend against include PL1 *Status Quo*.
- The group also recommended against PL3 *Reduce Breaks*, which would break the bank upfront.
- They recommended against PL7 *21 Miles in 10 Years*, which would cause a pretty significant cost increase in the front end.

Comments on process:

- The group looked at how each of the scenarios would impact the general public. They wanted to make sure that the BWS will eventually reach the desired 21 miles of pipeline replacement per year, while striking a balance between today's money and future generations, and not breaking either one.
- They also wanted to assure a high probability of success in implementation.

Dave asked whether anyone had to “arm wrestle” to get to these conclusions. A member of the group indicated that they were split at the beginning of their discussions. Some preferred a choice

between PL4 *Target 300* and PL2 *Ramp Up to 1%*. Others were trying to decide between PL6 *Step-wise* and PL5 *Slow Ramp Up*. All members of the group did not want PL3 *Reduce Main Breaks* or PL7 *21 Miles in 10 Years*. The also didn't want the status quo.

A question was posed, “What reasoning did you give each other to get to consensus?” Members of Group 1 indicated they first talked in smaller groups, focusing on what the increases were early on versus how it would look in the future. They also looked at the probability of implementation and whether a scenario would push costs to future generations. Group 1 members didn't want to “go high” for future generations; they didn't want a low probability of implementation. They were looking for a scenario with better than medium probability of implementation. From there, it was a matter of talking through all of those points. As the small groups overheard one another the consensus just started jelling.

Following a round of applause for Group 1, Dave asked Group 2 to talk about their results and the process to achieve them.

Group 2 – Members of Group 2 indicated their overall impression was: “this was a difficult task”. The toughest part was striking a balance between what is needed and how it will be paid for. They realized that while the Stakeholder Advisory Group has talked about these issues a lot, a process like this makes it more real, more concrete. Group 2 agreed that BWS should increase pipeline replacement to some extent, keeping in mind the need for a balance with costs.

Recommendations for:

- The group came to consensus on two scenarios: PL2 *Ramp Up to 1%* and PL6 *Step-wise*.
- The group compared the two and looked for feasibility of implementation between medium and high, recognizing there's a lot of faith in current BWS leadership, but voicing concern over what could happen 10 years from now or 30 years from now.
- The group also looked the number of main breaks prevented. If you're trying to have a system that works, you want to reduce those breaks as much as possible within the constraints of the financial plan.
- The two scenarios differ by \$90 million. That's a lot of money to individuals, but the group felt that in the scheme of things, over a length of time when you're talking about bond funding, \$90 million is really not a significant amount of money.
- Another consideration of the group was paying now versus later. They concluded it would be best to pay a little more now rather than shift the burden to the future, to their children or grandchildren. However, some members of the group advocated that the costs be more evenly spread out.

Recommendations against:

- A member of Group 2 indicated they eliminated several of the scenarios at the very start of discussions.
- When they better understood the meaning of “feasibility of implementation” and that was added to their considerations, it resulted in some pretty healthy conversation.
- Group members wanted to be confident that the selected scenario was really going to happen, so they wanted feasibility of implementation to be high. They mentioned that

current BWS management is held in high regard, but what about the future?

- A member of Group 2 mentioned that PL5 *Slow Ramp Up* was considered for a while, but was dropped based on its low alignment with Water Master Plan and the slow progress in reducing main breaks.

About consensus and clarifications:

- A question was posed whether the group came to consensus on any one scenario. The answer was that more time was needed, but members of the group felt they would have come to consensus given enough time.
- Some members of the group sought greater clarity regarding feasibility of implementation and whether there might be steps to take to strengthen feasibility.
- They also sought clarification about alignment with the Water Master Plan.

A question was posed whether Group 2 had discussed the difference between PL6 *Step-wise* and PL2 *Ramp Up to 1%*. One has double the cumulative revenue requirement (11% to 23%), but only reduces main breaks by an additional 25%. A member of Group 2 answered there was discussion between the two scenarios, but not a comparison regarding percentage of breaks.

Following a round of applause for Group 2, Dave then prompted the groups to think about their discussions in the first part of the meeting as they worked on the next exercise.

Exercise 2: Recommendations regarding communications

Dave asked stakeholders to work again with their designated breakout groups and talk through how to communicate challenging issues to the public. Each group had 25 minutes to discuss the following questions, and then report out to the full group:

- How strong would you expect support for your recommendation to be? From whom? What groups? What types of folks?
- How strong would you expect opposition to your recommendation to be? From whom?
- What points should be made to the public to build support for your recommendation?

Breakout Group Reports

Group 2 – This group started with the comment that their first observation was the same as for the last set of questions: this is not easy. What the issue came down to is that this is about “selling” a rate increase. Whatever level the increase is, somebody is not going to want that.

- The group talked about PL2 *Ramp Up to 1%*, where people would pay more early on, and PL6 *Step-wise*, that would defer some of the costs until later.
- For PL2 there’s likely to be more pushback from seniors, folks on fixed incomes or low income because that’s going to hit them hard. If the costs are pushed forward, it could diminish the level of opposition.
- PL6 would share some of the impact with future generations, so there might be some support.
- Overall, it would be a matter of messaging. “What will people get if the rates are a little

higher to start or if you push out a little longer?”

- BWS needs stress the message that this is about reduced main breaks. It will be important to build more confidence.
- People are pretty confident in the ability of the Board of Water Supply, but it would be helpful if people had greater confidence in how BWS will coordinate with other agencies, including construction. Messages should stress that BWS is going to do things to make this easier. It's going to be cheaper if we do it now.
- People do not want to put the costs entirely on their children and grandchildren.

It comes down to messaging and steps to convince the public what can be done to bump up the feasibility of chosen scenarios, particularly if the selected scenario will progress at a faster rate, but has only medium feasibility.

Group 1 – This group started their report by pointing out nobody likes an increase. They felt that people need to know that status quo has a cost. Status quo is not an option. If the current path is sustained going forward, main breaks will escalate from 300 to 350 breaks a year up to 500 breaks a year over just a decade. Something needs to be done. This is necessary.

- Group 1 agreed overall that people will be more open to the PL6 *Step-wise* scenario because, over time, the costs are spread over generations. Beyond the children and grandchildren of individuals on the Stakeholder Advisory Group, over the course of 30 years people will move to Hawaii; people will leave Hawaii. One of the strengths of PL6 is it balances that out.
- While PL6 comes with a modest revenue requirement increase (compared to the series of 9.5% increases that BWS that just came off), any BWS rate increase going forward will be on top of what ENV is doing. Even for those who understand the difference between BWS and environmental services, people tend to group government agencies. This perception is likely to be a source of opposition from a broader group of the public.
- It would be good to remind people that there's a cost to avoid sitting in traffic because of a water main break.
- Another point is that BWS should consider use of messaging from the standpoint that the actions driving rate increases will help to avoid infrastructure disasters that are occurring right now on the continent. There's Flint, Michigan, and about five years ago it was Washington DC where people could not drink the water. The message could have a positive spin, pointing out that BWS is working to get ahead of the game on infrastructure to make sure that they can continue to provide clean drinkable water that is going to be there to sustain you.

Dave said that the questions tackled by the groups are not easy, but are very real. These are questions that are going to have to be dealt with by the BWS as the rate process moves forward. Input from the Stakeholder Advisory Group is and will continue to be critically important.

He thanked everyone for coming and said that we look forward to the next BWS Stakeholder Advisory Group meeting, September 12, 2017 at the Honolulu Club.