MINUTES

REGULAR MEETING
OF THE
BOARD OF WATER SUPPLY

August 28, 2017

At 2:03 PM on August 28, 2017 in the Board Room of the Public Service Building at 630 South Beretania Street, Honolulu, Hawaii, Board Chair Andaya called to order the Regular Meeting.

Present:	Bryan P. Andaya, Chair David C. Hulihee Kapua Sproat Kay C. Matsui Ross S. Sasamura
Also Present:	Ernest Lau, Manager and Chief Engineer Ellen Kitamura, Deputy Manager and Chief Engineer Erwin Kawata Mike Fuke Jason Takaki Joe Cooper Kevin Ihu Kathleen Pahinui Henderson Nuuhiwa Garon Hamasaki Robert Morita Michele Thomas Marc Chun
Others Present:	Jeff Lau, Deputy Corporation Counsel Jessica Wong, Deputy Corporation Counsel David Ebersold, CDM Smith Chris Harris, CDM Smith Audrey Harris, CDM Smith Tom Myers, Brown and Caldwell
Absent:	Ford N. Fuchigami

APPROVAL OF MINUTES	Approval of the Minutes of the Special Meeting held on July 31, 2017
MOTION TO APPROVE	David Hulihee and Ross Sasamura motioned and seconded, respectively, to approve the Minutes of the Special Meeting of July 31, 2017. The motion was unanimously carried.

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU

RESOLUTION NO. 877, 2017

JOSEPH S. BURUSSO, JR.
2017 EMPLOYEE OF THE YEAR

WHEREAS, JOSEPH S. BURRUSO, JR., a Supervising Construction Inspector with the Capital Projects Division, has been a dedicated and exceptional employee since joining the Board of Water Supply (BWS) in February 1991, and was selected as the Department's 2017 Employee of the Year; and

WHEREAS, MR. BURRUSO oversees a staff of 10 construction inspectors within the Construction Branch, which is responsible for managing more than 180 projects that are key to ensuring water service reliability on Oahu now and into the future; and

WHEREAS, MR. BURRUSO effectively administers an inspection program consisting of many varied and complex projects, made impressive by the fact that the majority of his staff have less than five years of experience in construction inspection; and

WHEREAS, MR. BURRUSO has established a highly-effective working process for monitoring the timely completion of projects within the contract constraints; and

WHEREAS, MR. BURRUSO is constantly exploring new work processes to improve construction inspection efficiencies, resulting in significant time and cost savings to the BWS and water rate payers; and

WHEREAS, MR. BURRUSO works tirelessly with all stakeholders to ensure construction projects run as smoothly as possible with minimal disruptions; and

WHEREAS, JOSEPH S. BURRUSO, JR., has been selected as a Board of Water Supply Employee of the Year and will go on to represent BWS in the upcoming City Employee of the Year Recognition Ceremony, bringing pride and honor to the Department, his family, and friends; now, therefore

BE IT RESOLVED by the Members of the Board of Water Supply, City and County of Honolulu, that we do hereby express to JOSEPH S. BURRUSO, JR., our sincere appreciation for his outstanding service to the Department and to the City and County of Honolulu; and

BE IT FURTHER RESOLVED that the Members of this Board express to JOSEPH S. BURRUSO, JR., our sincere congratulations upon his selection as the Board of Water Supply Employee of the Year for 2017; and

BE IT FINALLY RESOLVED that this Resolution be presented to MR. BURRUSO with our heartfelt aloha and best wishes for success in all his future endeavors.

Adopted this 28th day of August 2017
Board of Water Supply, Honolulu, Hawaii

BRYAN P. ANDAYA
Chair of the Board

DISCUSSION: Board Chair Andaya announced that Mr. Burruso was unable to attend the Board meeting. Therefore, the Board will defer Resolution No. 877, 2017, to the next regularly scheduled meeting on September 25, 2017.

MOTION TO DEFER: Ross Sasamura motioned to defer Resolution No. 877, 2017, and was seconded by David Hulihee. The motion was unanimously carried.

DEFERRAL OF RESOLUTION NO. 877, 2017 TO THE SEPTEMBER 25, 2017 BOARD MEETING WAS APPROVED ON AUGUST 28, 2017			
	AYE	NO	COMMENT
BRYAN P. ANDAYA	X		
DAVID C. HULIHEE	X		
KAPUA SPROAT	X		
KAY C. MATSUI	X		
ROSS S. SASAMURA	X		
FORD N. FUCHIGAMI			ABSENT

"August 28, 2017

ELECTION OF CHAIR AND VICE CHAIR

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Election of Chair and Vice Chair of the Board of Water Supply

Please be advised the Bylaws of the Board of Water Supply provides that the Chair and Vice Chair of the Board shall be elected annually from among and by the appointed members of the Board at the first regular meeting in June. However, because the regular meetings in June and July 2017 were not held due to lack of quorum, election of the Chair and Vice Chair of the Board is on the agenda for this August 2017 regular meeting.

Respectfully submitted,

/s/ ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer"

NOMINATION AND MOTION

David Hulihee nominated Bryan Andaya to continue as Board Chair and nominated Kapua Sproat as Vice Chair. David Hulihee motioned to elect Bryan Andaya and Kapua Sproat as Chair and Vice Chair, respectively. The motion was seconded by Ross Sasamura and unanimously carried.

BRYAN ANDAYA ELECTED AS CHAIR AND KAPUA SPROAT ELECTED AS VICE CHAIR OF THE BOARD OF WATER SUPPLY, COMMENCING AUGUST 28, 2017, AT THE AUGUST 28, 2017 BOARD MEETING			
	AYE	NO	COMMENT
BRYAN P. ANDAYA	X		
DAVID C. HULIHEE	X		
KAPUA SPROAT	X		
KAY C. MATSUI	X		
ROSS S. SASAMURA	X		
FORD N. FUCHIGAMI			ABSENT

ITEM FOR INFORMATION NO. 1

"August 28, 2017

FINANCIAL PLAN AND RATE STUDY UPDATE

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Board of Water Supply Financial Plan and Rate Study Update

Joe Cooper, Waterworks Controller, will present an update of our Water Master Plan Financial Plan and Rate Study. As part of this update, David Ebersold, of CDM Smith, will give a presentation on Revenue Requirement and the Capital Improvement Program.

Respectfully submitted,

/s/ ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Attachments"

The foregoing was for information only.

DISCUSSION:

Joe Cooper, Waterworks Controller, gave the presentation. He explained the three primary steps of rate making, the values and objectives that need to be considered in setting the rates, the objectives in setting rates, and rate design choices.

Mr. Cooper discussed BWS's block rate structure, and showed the BWS's three different tiers for single-family residential customers. Board Vice Chair Sproat asked why there are only three tiers. Mr. Ebersold explained that other organizations vary between three and five tiers, depending upon the different objectives they want to achieve.

Mr. Cooper continued by discussing the variety of affordability programs that different water agencies use, the purposes of a cost of service study, the breakdown of how much water each customer class uses daily including maximum day and peak hour capacity, the comparison of the cost of service with the amount of revenue each class provides, and he explained the Zero Sum Game played by the Stakeholder Advisory Group (SAG).

Mr. Andaya inquired about the Zero Sum Game and asked if the SAG members were told that changes would be implemented immediately in one year or were they told it would be implemented over a course of a time. Mr. Cooper responded that a time frame was not discussed.

Ms. Sproat asked where the agriculture customers are located. Manager Lau responded that there are some on Kunia, Waianae, Waimanalo, and North Shore lands.

Mr. Hulihee inquired how subsidizing one group over another ties into BWS's mission. Mr. Cooper responded that BWS doesn't have a legal requirement to charge each customer class by cost of service. He stated that one of BWS's goals is to support sustainability so having a block structure helps to encourage water conservation, which ties to BWS's mission. Mr. Lau added that subsidizing becomes a policy call. The multi-family and non-residential classes pay a little more to help reduce costs to single-family residential customers and also help support agricultural and non-potable customers. Non-potable water provides lower quality water to irrigate areas that are able to use that type of water, and this helps extend the potable water resource. Ms. Sproat asked what the agriculture rate is. Mr. Cooper replied that it is $4.42 per thousand gallons for the first 13,000 gallons, then it drops down to $1.89 per thousand gallons.

Ms. Sproat asked how the cost of service compares to the last time the study was done. Mr. Ebersold explained that the trends are similar, but the difference is that the subsidization of single-family customers shows up stronger in this study because there was better data to determine peak capacity.

Mr. Cooper mentioned that agriculture and non-potable users are subsidized, but the cost to do that is very small. Mr. Lau brought up the time when the Mayor asked the Board to consider supporting affordable housing, which is like subsidizing either impact fees or quantity based rates. Mr. Hulihee asked if that would be a one-time charge. Mr. Lau explained that it would be monies up front that are collected from BWS's customers and developers to help pay for the infrastructure. Other types of subsidies would be community assistance rates, like a lifeline rate. Mr. Hulihee stated that this is "opening up a can of worms," and questioned why agriculture is being subsidized when the farmers are probably making a lot of money.

Mr. Andaya referred to the "Cost of Service Summary" slide and said that the differential for the single-family residences, the amount being subsidized, is $10.7 million and asked if this is for one year. Mr. Lau responded yes, for 2016. Mr. Andaya stated that over five years it could be about $50 million and said that this is a lot of money. Mr. Ebersold stated that the non-potable customers get charged the cheaper rate. Mr. Hulihee said they are getting a cheaper rate, yet it costs BWS more money to produce and stated that this should be fixed. Mr. Lau stated that the cost is set lower so it will be an incentive for them.

Ms. Sproat added that part of the conservation ethic is to preserve as much fresh water for drinking. Mr. Lau said that in order to support growth, lower quality water needs to be subsidized in order to preserve the high quality water for domestic uses. He mentioned that non-potable water, especially recycled wastewater, has benefits of having higher nitrogen levels, which enable the golf courses to reduce fertilizing. Mr. Hulihee stated that it can't

pay for itself. Mr. Lau agreed and said that by using this water, it helps the Environmental Protection Agency's requirement that water is not sent out through an outfall into the ocean, but it is being put to use. Mr. Hulihee feels that BWS should charge the non-potable users more since they are forced to use that water, and if they want to use potable water, then charge them at a higher rate, since they won't be using the proper water.

Mr. Andaya asked if the chart showing non-potable users include recycled water, Reverse Osmosis (RO) water, and ocean cooling. Mr. Ebersold responded that it does not include the recycled or RO numbers in it. If those were included, the cost of service would be about $12 million and the revenue from that would be about $5.7 million, so combined, they would get about a 200 percent subsidy. Mr. Lau asked if the $1.6 million included the capital renewal and replacement needs for the recycled water. Mr. Ebersold replied that the cost looks at the investments that have been made to date, but it doesn't look at the future costs that are required.

Board Member Sasamura stated that it doesn't look ahead to see how the ratepayers in that category will increase over time as improvements are made in R-1 water storage and other infrastructure investments, so the economies of scale will change and that subsidy may flip into revenue. Mr. Ebersold said that it would only change the revenue if the amount they were charged changed. Mr. Sasamura said but if more people use non-potable water, then the revenue would go up. Mr. Ebersold added that the cost of service would also go up.

Mr. Andaya stated that this discussion will be ongoing until there is a final decision on the rates and asked for updated numbers and information at a future meeting.

Mr. Lau introduced Dave Ebersold to talk about the capital improvement program (CIP) and the different CIP scenarios for the amount of pipeline replacement that gets done.

Mr. Ebersold informed the Board that all of the high priority non-pipeline projects such as pump stations, sources of supply, treatment, and reservoirs that were identified in the Water Master Plan (WMP) are in each scenario and will be taken care of in the next decade. The thing that varies in each scenario is the amount and rate of pipeline replacement, so it's about how quickly replacement is done and how to balance that against the number of main breaks.

Mr. Ebersold discussed the three primary steps of rate making, the different parts that identify the revenue requirement and explained the difference between each scenario. He explained that pipeline (PL)1 is named status quo, continuing to replace about six miles of pipeline each year. PL2 is named ramp up to one percent. One percent of the 2100 miles in the system, would be to replace about 21 miles of pipeline each year and to build new pipe with the design life of 100 years. The one percent is what the American Water Works Association recommends as a long term average and it is consistent with the WMP. Mr. Hulihee asked how the 100 year

pipeline compares to previous older pipes. Mr. Ebersold replied that pipe materials change over time, and the older cast iron pipes were built really thick, and if they are in areas with low soil corrosivity, some of them can last beyond 100 years.

Mr. Ebersold continued with PL3, which is named reduce breaks. Initially, the thinking was to go above the one percent substantially for a number of years to be able to get a reduction in the number of main breaks, but based on more recent analysis, it turned out that this wasn't necessary. PL4 is named target 300 and would vary the amount of pipeline replacement through time to target maintaining about 300 breaks a year, and this was the recommended target in the WMP. PL5 is named slow ramp up. It would be to ramp up to 21 miles per year so instead of doing it quickly like PL2, it does it over a long period of time, over about 25 years. PL6 is named step-wise increase. The idea is to fall somewhere in between and do a more gradual ramp up to 21 miles a year, and the last scenario is PL7, which is named 21 in 10. It's to get 21 miles of new pipe in the ground within a decade.

Mr. Ebersold explained that the more pipe replaced, the more it will cost, and he showed a chart with the CIP cost for each scenario. He also showed a chart with the main break projects for each scenario. Mr. Ebersold applauded BWS for the effort in completing this type of analysis and said that few agencies have ever done this.

Mr. Hulihee asked if there is a study on the age of the pipes and which ones should be changed. Mr. Ebersold replied that for each segment of pipe in the ground, there's information on what year it was installed, what material it was made of, etc. Mr. Hulihee asked if the depreciated cost to replace it is known. Mr. Ebersold replied yes, and that information was used in doing the main break projections. Mr. Ebersold explained that they did an analysis of the risk of the pipes breaking, which takes into account not just that the pipe is obsolete but other conditions that cause the pipe to break such as the soil type, corrosive conditions, etc. So each scenario prioritizes the replacement of pipes dealing with the highest risk pipelines first, not just replacing them due to age.

Mr. Ebersold continued to discuss the measurable and subjective criteria to consider, said that this information was presented to the SAG at the August 9th meeting, talked about each scenario and how much of a shift of the burden it was to future generations and how the scenarios aligned with the WMP.

The Board had discussion about the different scenarios and agreed that they would eliminate PL1, which is status quo, and PL3, which is one the Board would like to do but realistically may not be able to attain. The Board also eliminated PL5 since it was low in alignment with the WMP. The Board discussed PL7, which was Mr. Lau's recommendation. Mr. Lau elaborated on some of its challenges. The major challenge would be the lack of internal capacity to administer PL7. Mr. Andaya's concern with PL3 and PL7 is that rates would be set according to these goals, and it wouldn't be good if BWS

wouldn't be able to meet the goals.

Ms. Sproat favored PL2 which has a medium feasibility of implementation, avoids 4025 main breaks and has a high alignment with the WMP. She stated that PL6 avoids only 4087 main breaks, has a medium alignment with the WMP and a high level of feasibility of implementation.

With respect to the non-potable subsidies, Ms. Sproat commented that even though it's not a direct investment in infrastructure, it is an investment in the long term water future because it does provide incentive for other people to use lower quality water for appropriate uses, so in a way it does support BWS's mission.

The Board agreed to support PL2, to be as aggressive and as achievable as possible. Because there is some time before the Board votes on the rate increases, if they find that PL2 is not achievable, then they could possibly switch to PL4.

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City and County of Honolulu

Board Update

Long-Term Financial Plan and Rate Study

Joseph Cooper

Waterworks Controller

August 28, 2017

Three primary steps of rate making

Compare revenue with operating and capital costs

Identify differences in costs to serve each of the customer classes

Consider level and structure of rate design for each class of service

Rate how you value these objectives

- Legal
- Recover Full Cost of Water
- Credit Strength
- Fair and Equitable
- Stable and Predictable
- Encourage Conservation
- Understandable
- Affordable

Weighing of Rate Objectives from the Stakeholders

	Recover Full Cost of Water	Credit Strength	Fair & Equitable	Stable & Predictable	Encourage Conservation	Understandable	Affordable
High	10	10	10	10	10	10	10
Low	5	4	8	5	5	6	6
Mean	9.4	6.7	9.1	7.8	8.3	8.3	8.8

Rate design requires choices

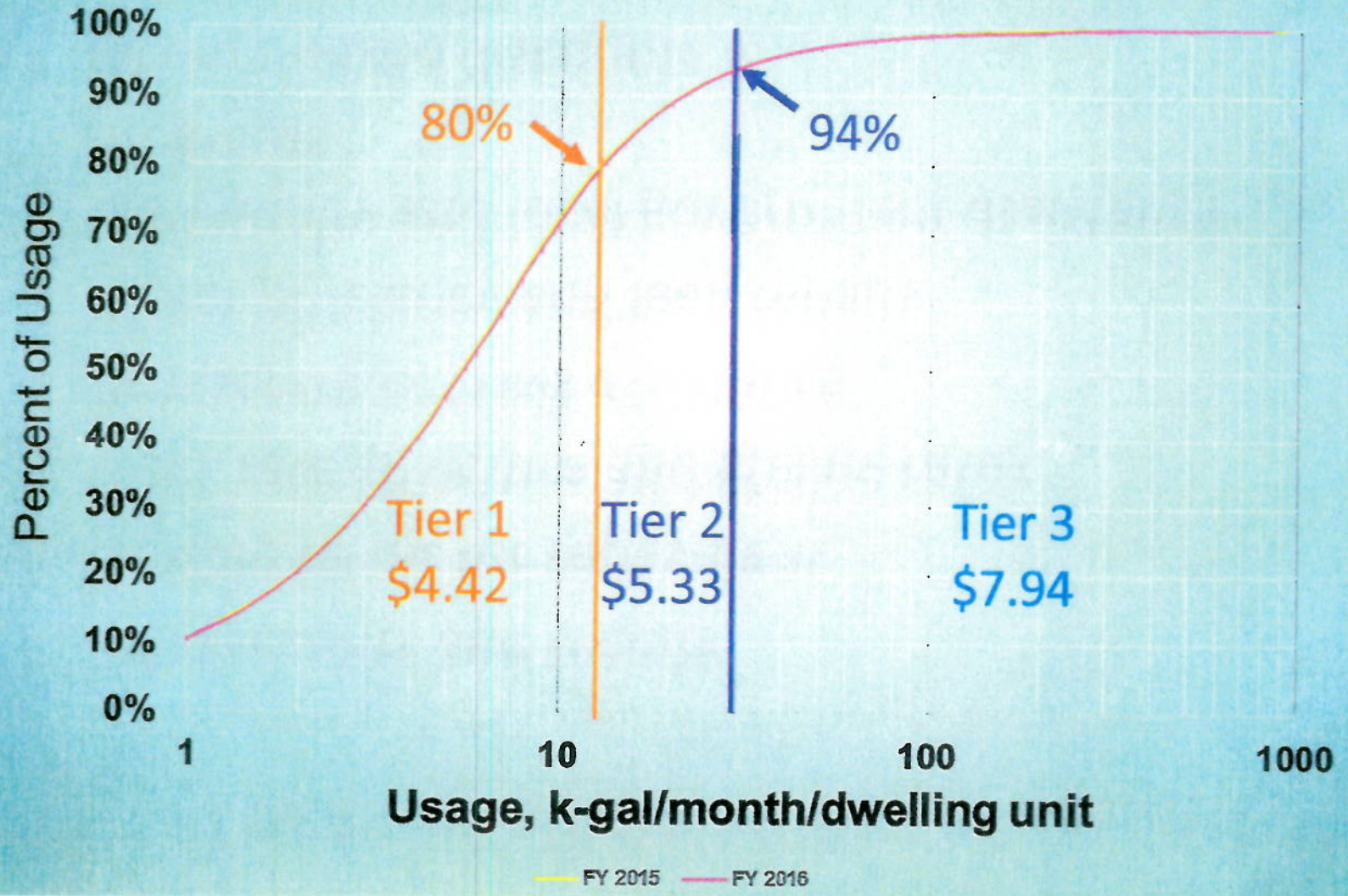
- The mix of fixed charges vs. volumetric charges
- The number, size and price of residential rate tiers
- Consideration of alternate non-residential rate structures and prices
- Special rates for specific customer classes, to reflect community values, e.g. agriculture
- Creating an affordability program
- Water System Facilities Charge

Amount of fixed charges vs. commodity charges

- BWS's fixed charge is the monthly billing charge
- With increasing conservation, water sales (and revenues) decrease
- To stabilize revenues, some agencies increase the amount of their fixed charges
- Higher % of fixed charges benefits larger water users
- Higher % of fixed charges decreases an individual customer's ability to "control" their water bill
- Should be linkage between charges and services they support

Value: Stable and predictable, Encourage conservation, Understandable

94% of single-family residential customers are in tiers 1 and 2



Value: Encourage conservation

Types of affordability programs

1. Bill discounts and credits
2. Flexible terms for repayment
3. Block rate structure and lifeline rates
4. Temporary or crisis assistance
5. Water efficiency and leak repairs
6. Community and local government assistance programs
7. Income-based discounts

(Abell Foundation Report, Nov 2016)

Value: Affordable

Purposes of a Cost of Service Study

- Evaluate the costs to serve customers
- Compare costs to rate-based revenue
- Show the impact of the rate structure on varied customer classes
- Inform rate policies and decisions about the rate structure

Units of service

	No. of Accounts or Dwelling Units	Avg. Daily Use	Max Day Extra Capacity	Peak Hour Extra Capacity
Single	165,613	46,750	14,025	74,800
Multi	138,007	26,618	1,331	29,280
Non-residential	9,372	45,041	11,260	29,277
Ag	497	3,021	604	604
Non-potable	74	1,827		

Cost of service summary

	Revenue $M	Cost of Service $M	Diff. $M	Diff. %
Single	$96.6	$107.2	-$10.7	-11%
Multi	$45.4	$40	$5.4	12%
Non-residential	$82.2	$67.4	$14.8	18%
Ag	$2.4	$3.8	-$1.4	-60%
Non-potable	$1.6	$2.4	-$0.7	-46%

Zero Sum Game

- Goal: Reach consensus within your group about the distribution of poker chips (revenues) in each "pie slice" representing customer classes.

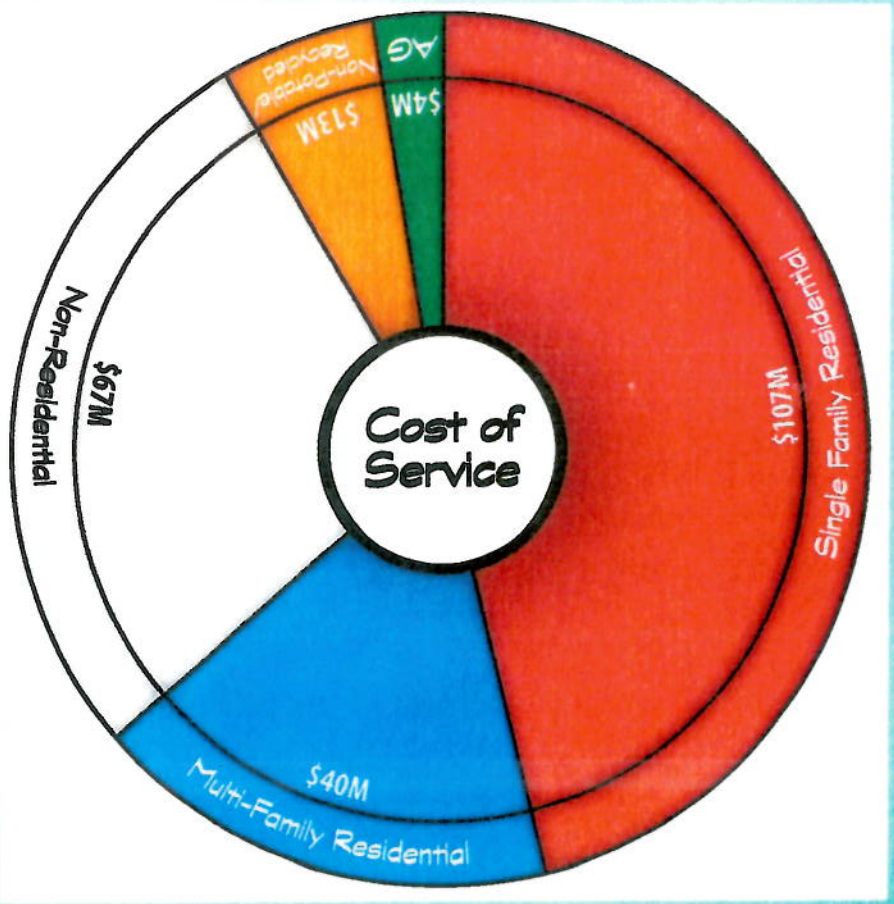


Table 2

Customer Class	Pie Slice (Cost of Service) $ Million rounded	Starting Number of Chips on Board (Revenue)	Ending Number of Chips on Board (Revenue)	Change in Number of Chips + or -	% Change Per Chip + or -	Total % Rate Change + or -
Single-Family Residential	107	97	99	+2	1.0%	+2.0%
Multi-Family Residential	40	45	43	-2	2.2%	-4.4%
Non-Residential	67	82	83	+1	1.2%	1.2%
Agricultural	4	2	1	-1	50.0%	-50.0%
Non-Potable/ Recycled	13	5	5	0	20.0%	No change

Trends among all 3 groups

- All of the groups made the same change in the agricultural customer section by taking an ag chip off the table. That indicates that ag is a benefit to everyone, and all groups increased the agricultural subsidy. It also was consistent that single-family was asked to pay for part of that.
- Another trend expressed in varying degrees was a move away from the multi-family residential subsidy for the single-family residential class. Group recommendations were as little as one chip up to complete elimination of non-red chips from the red (single-family residential) pie slice, but all groups took a step in that direction.
- The non-potable/recycled water subsidy was largely left intact. Groups moved who paid around a bit, but the subsidy remains.

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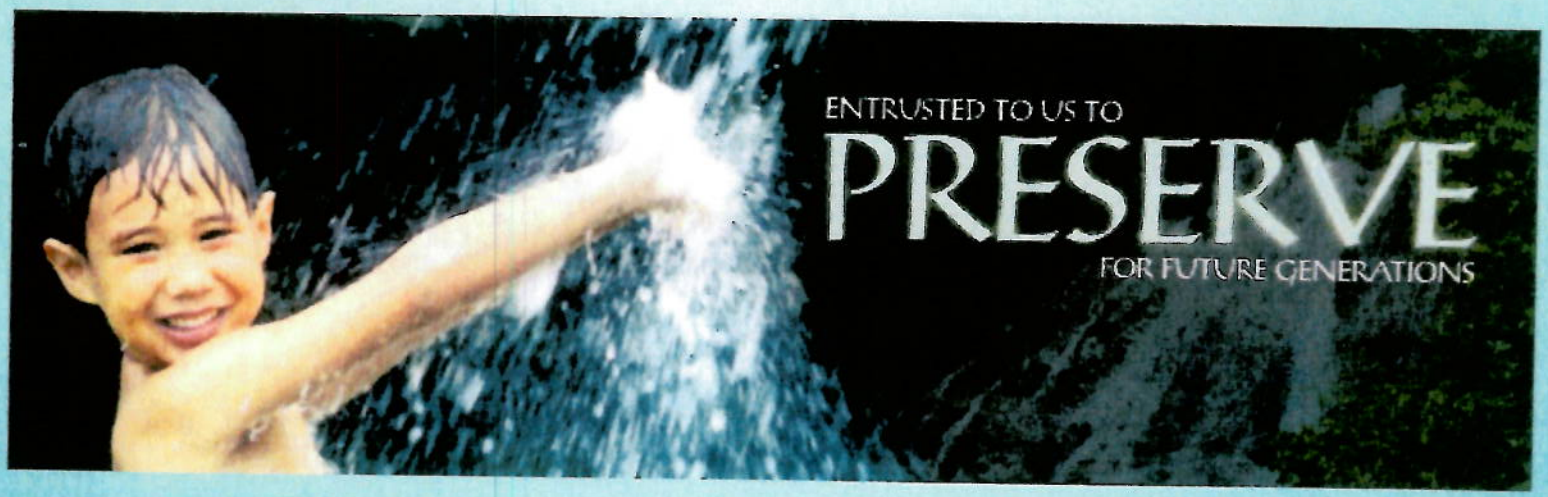

Mahalo!

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Board Update

Revenue Requirement – Capital Improvement Program

David Ebersold, CDM Smith

BWS Water Master Plan Project

August 28 , 2017

For your consideration:

- What overall impressions do you have?
- Should BWS increase its current rate of pipeline replacement?
- If so, what scenario would you recommend, and why?
- What scenario(s) would you recommend against, and why?

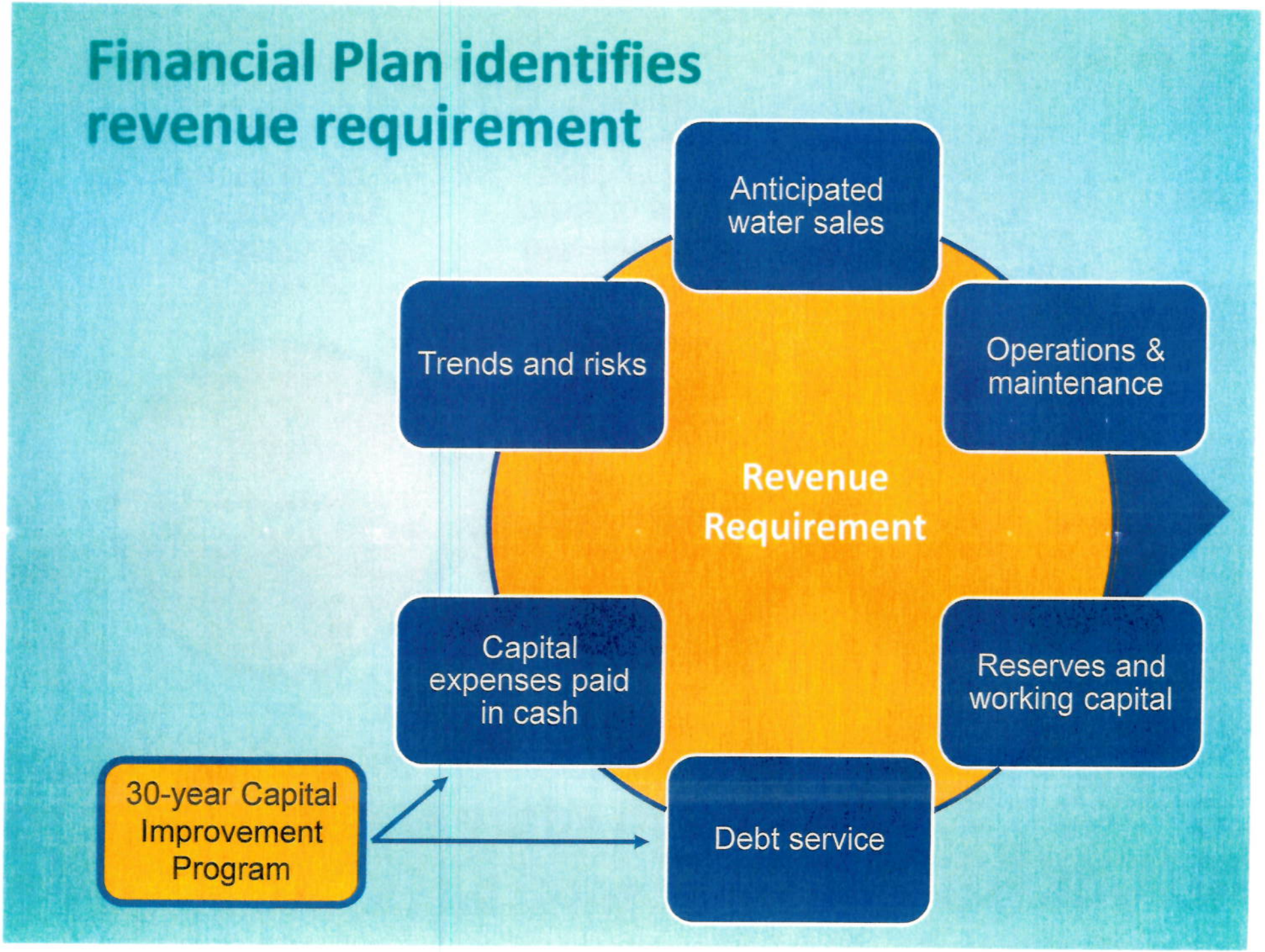
Three primary steps of rate making

Compare revenue with operating and capital costs

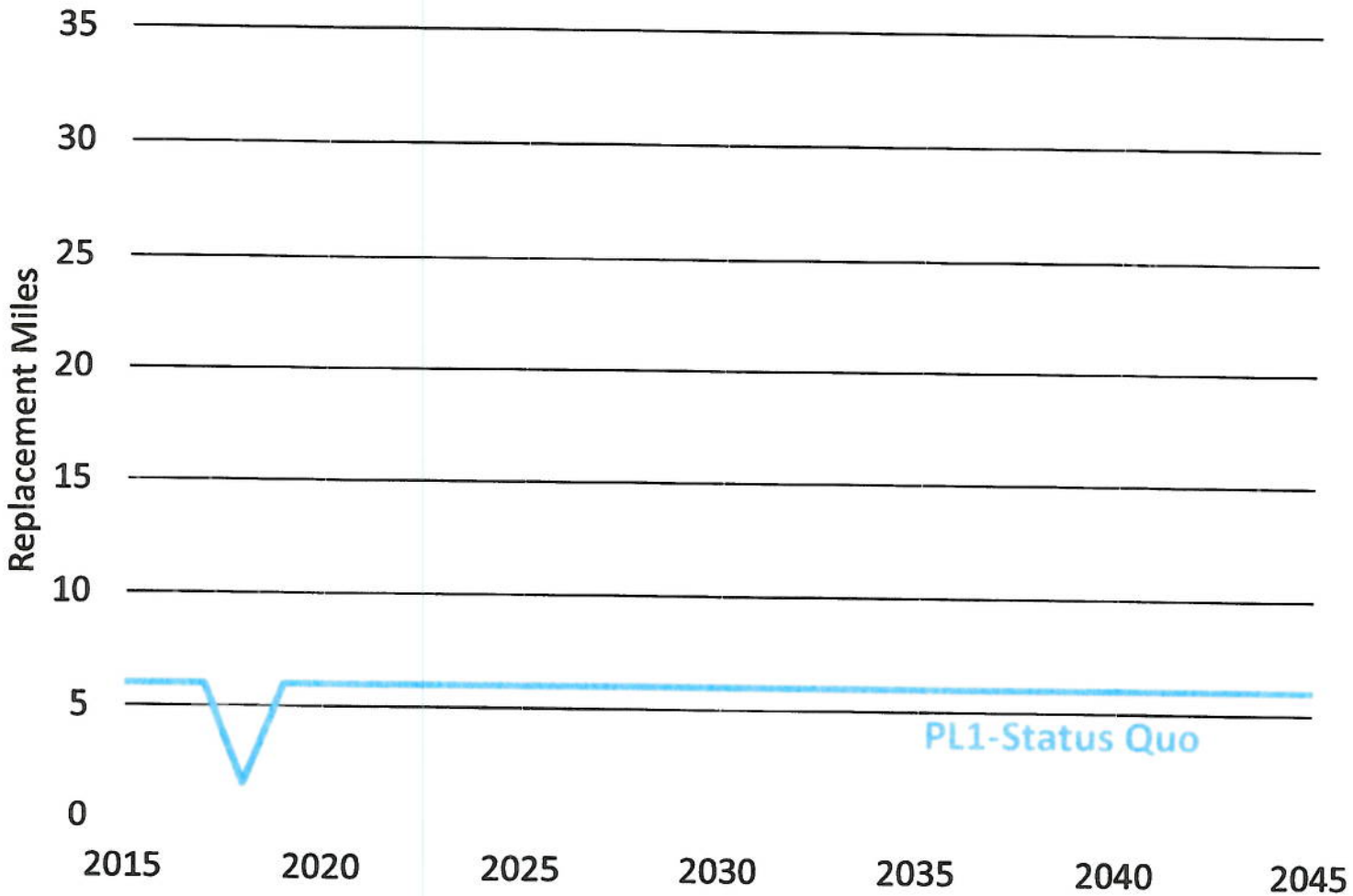
Identify differences in costs to serve each of the customer classes

Consider level and structure of rate design for each class of service

Financial Plan identifies revenue requirement



Rate of pipeline replacement for each scenario



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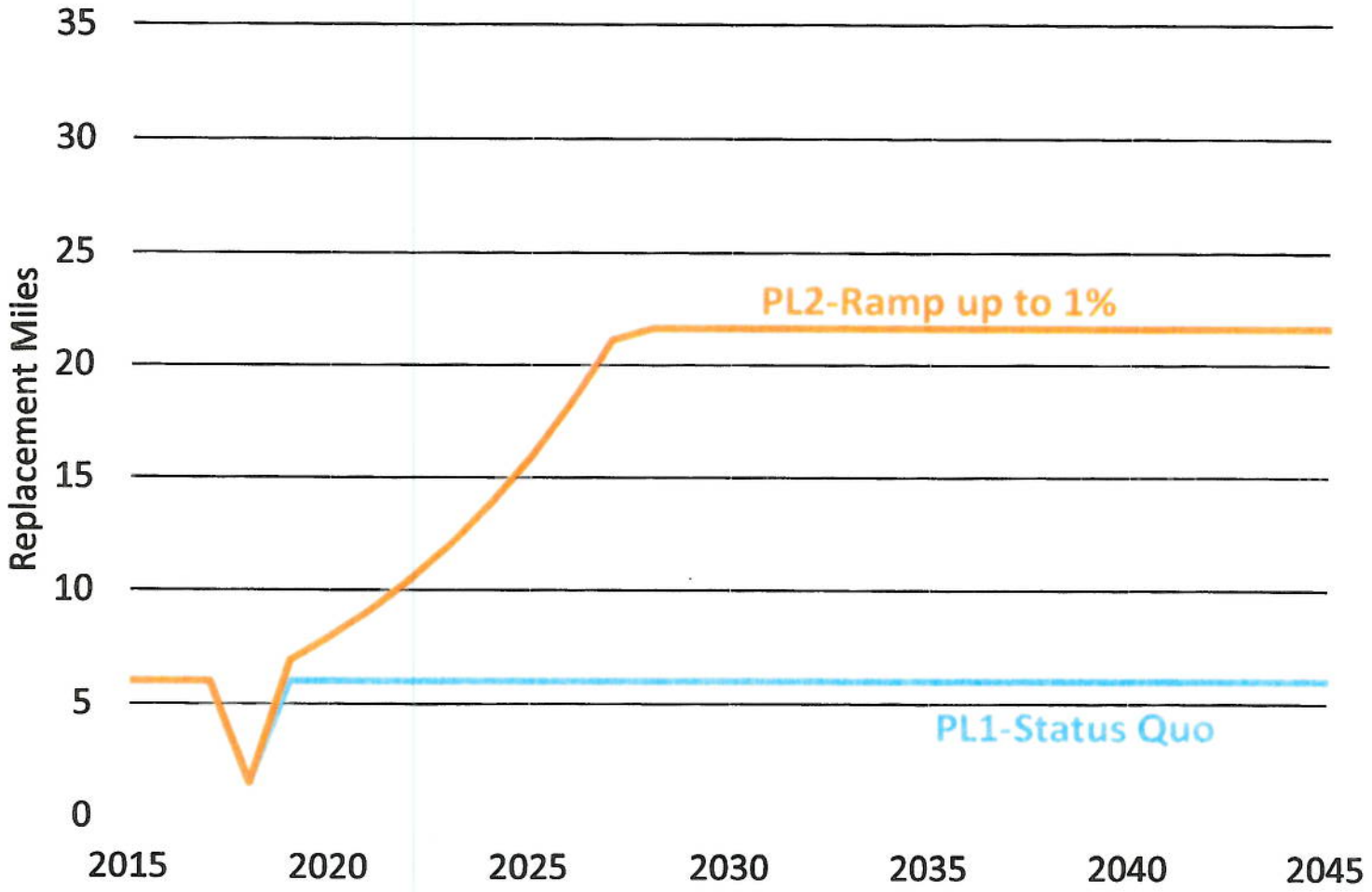

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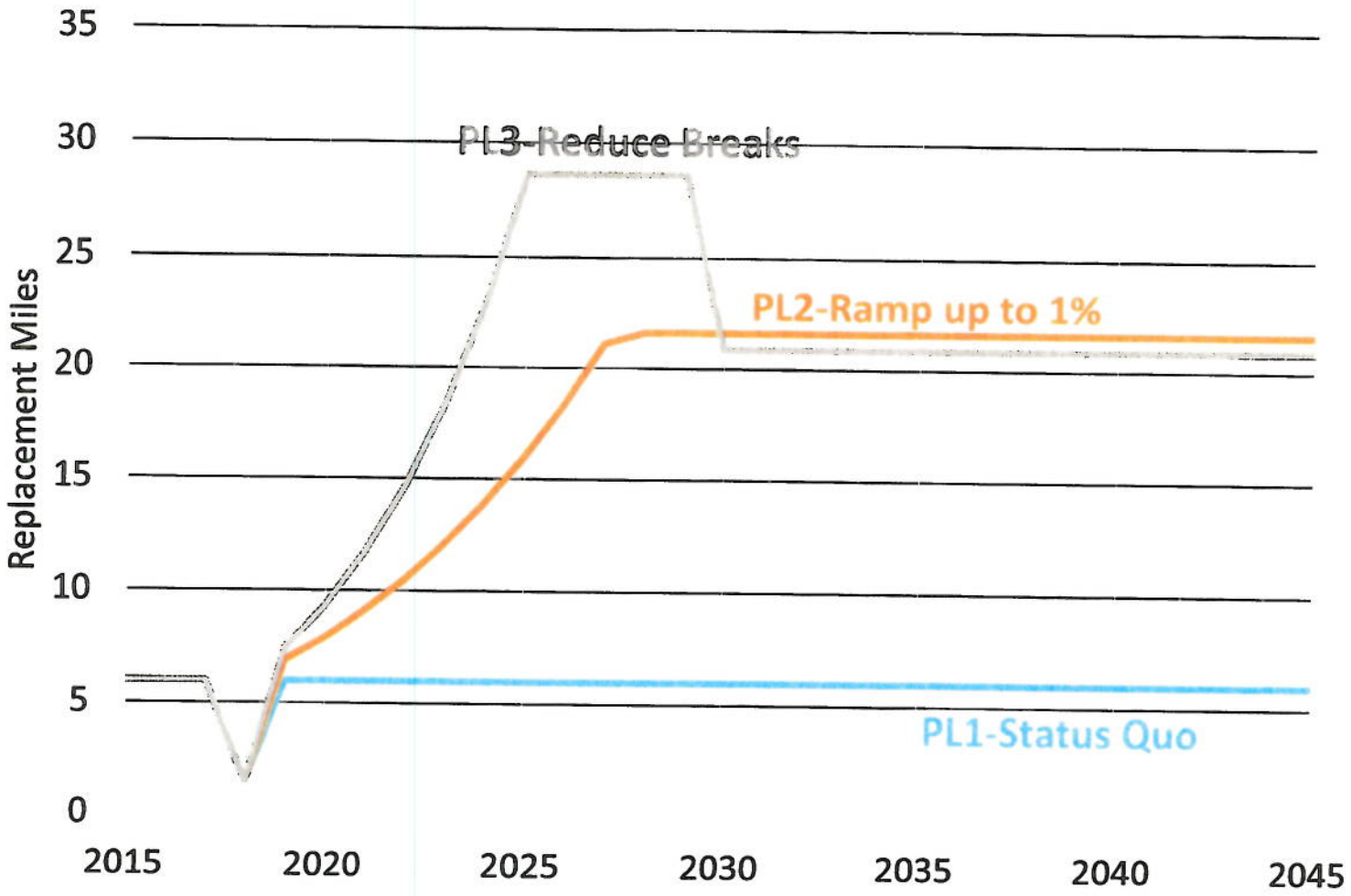

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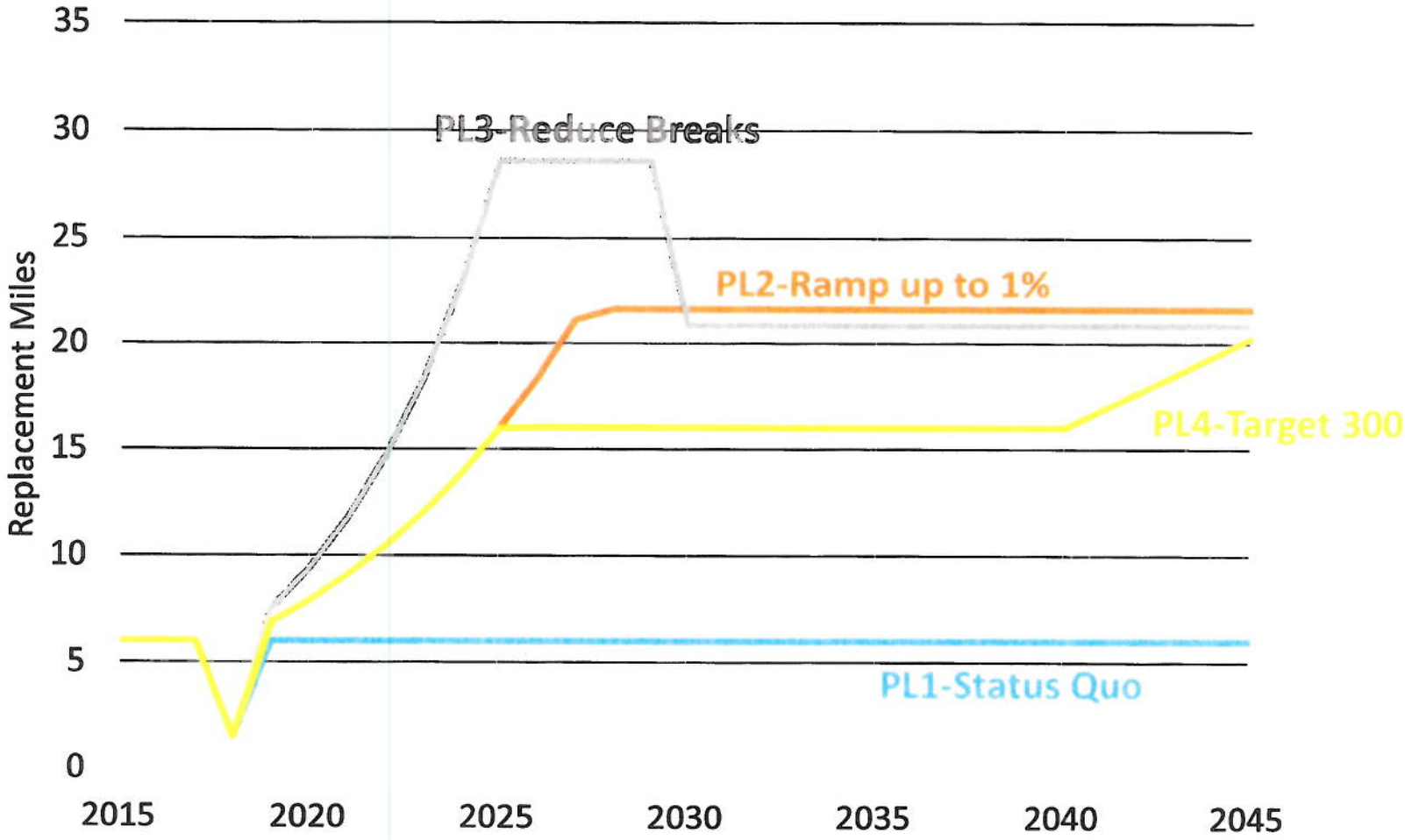

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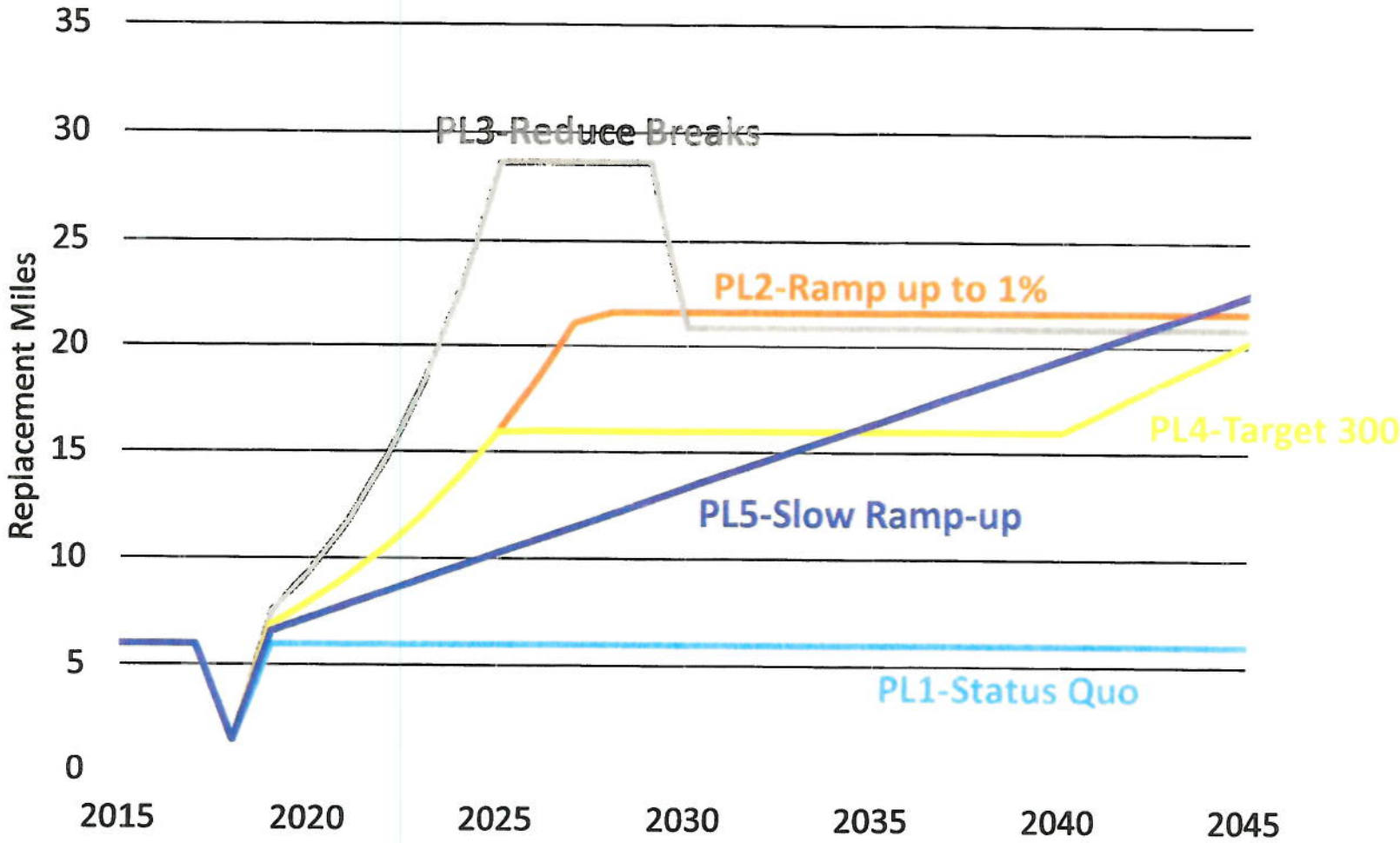
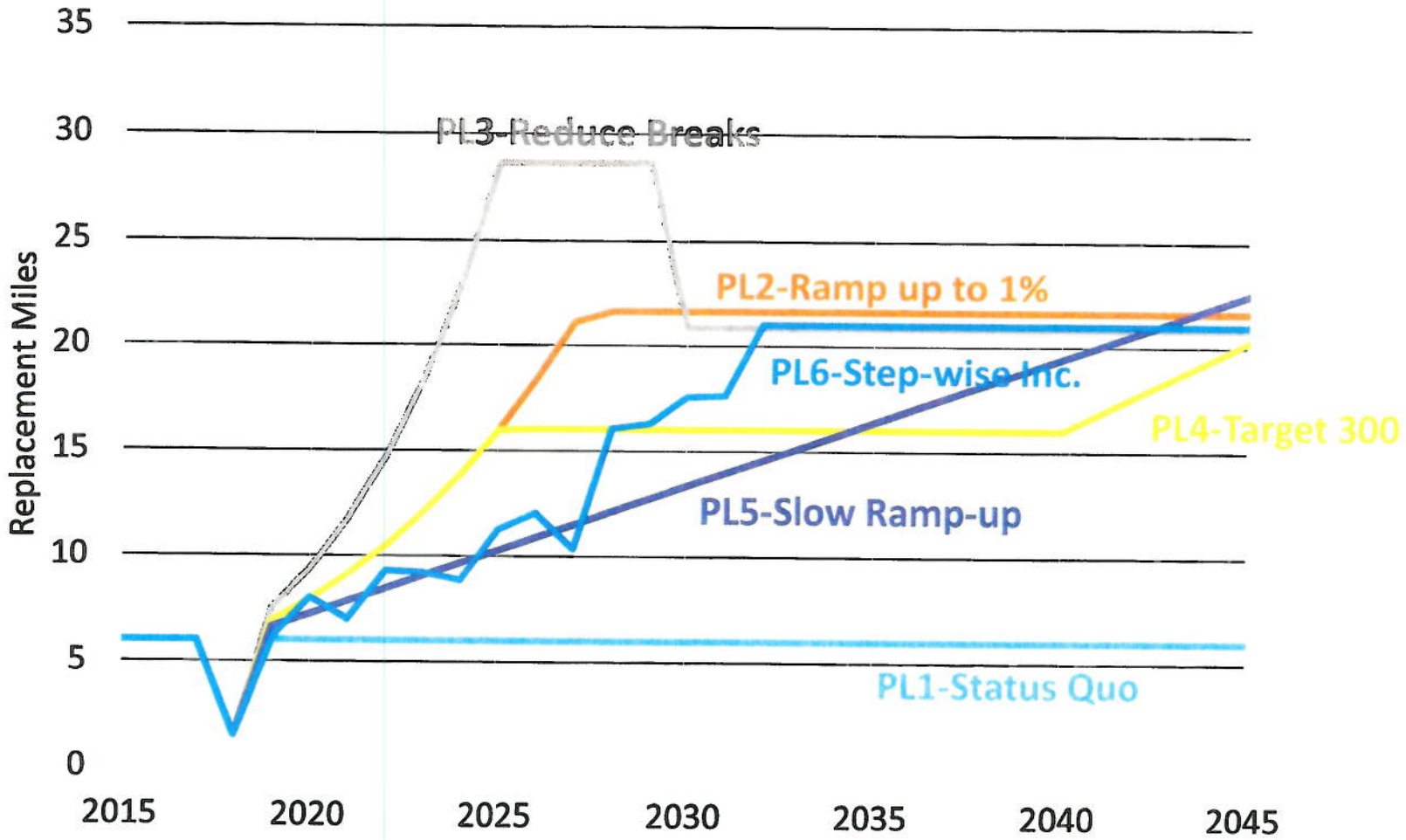


Rate of pipeline replacement for each scenario



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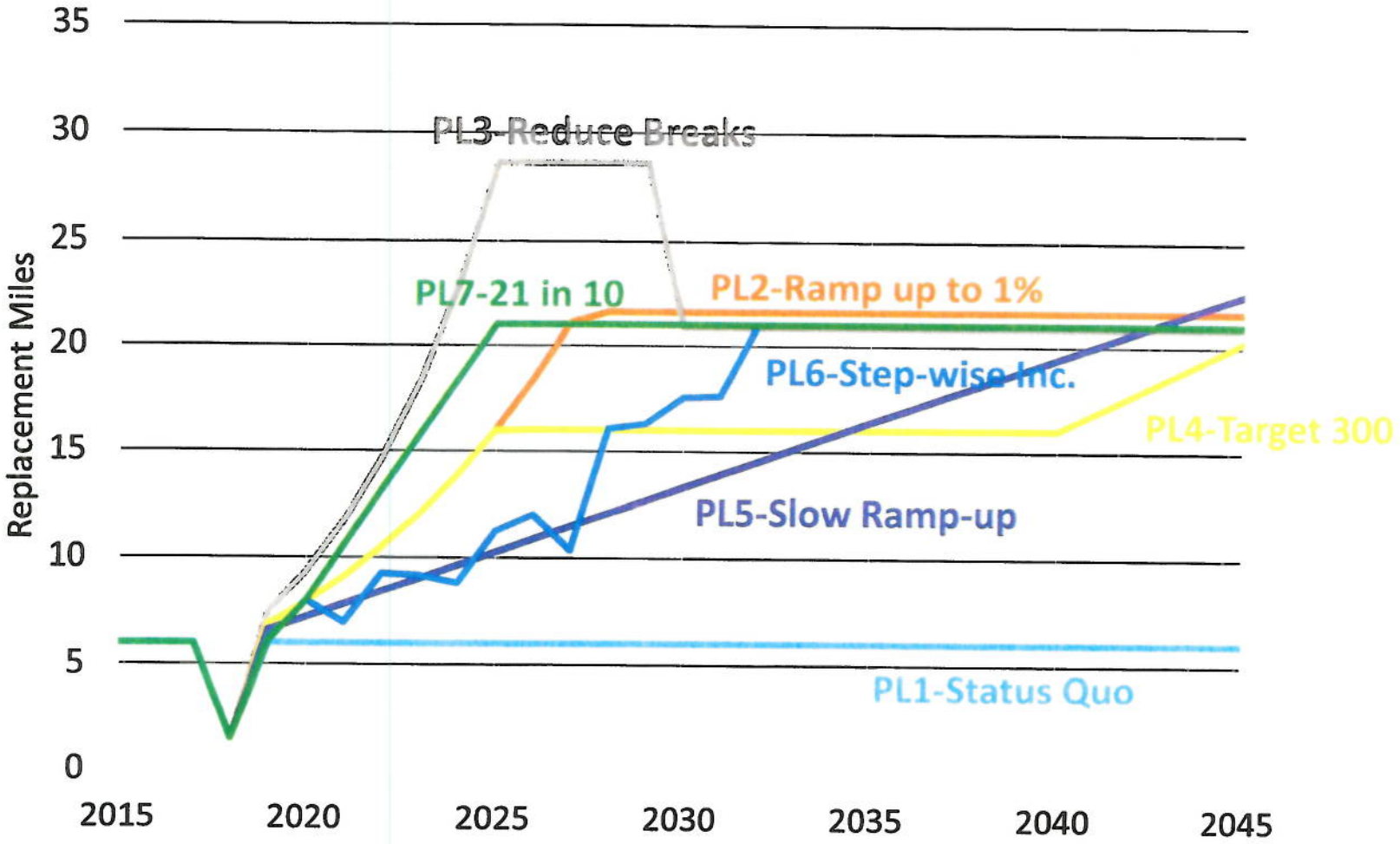
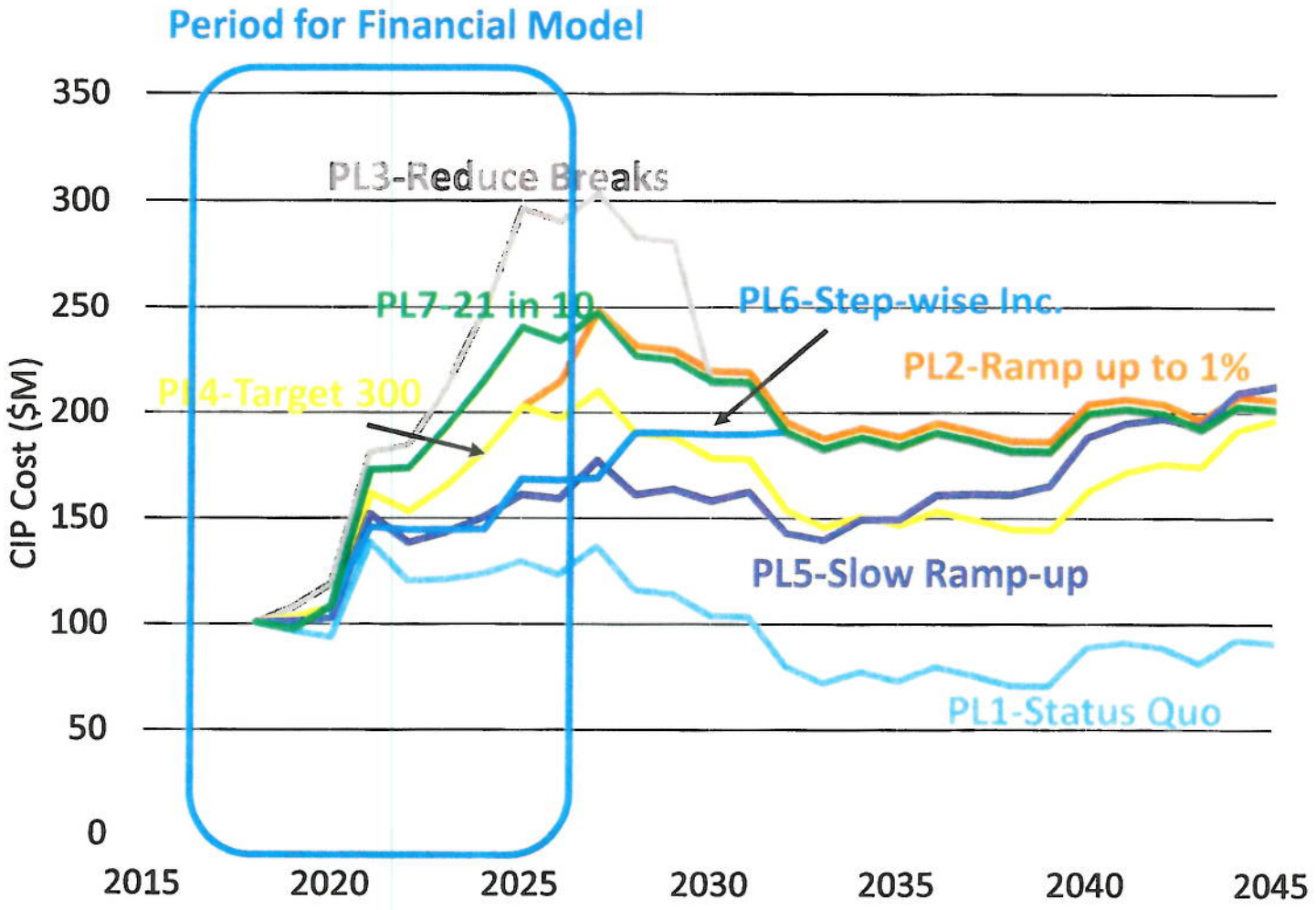
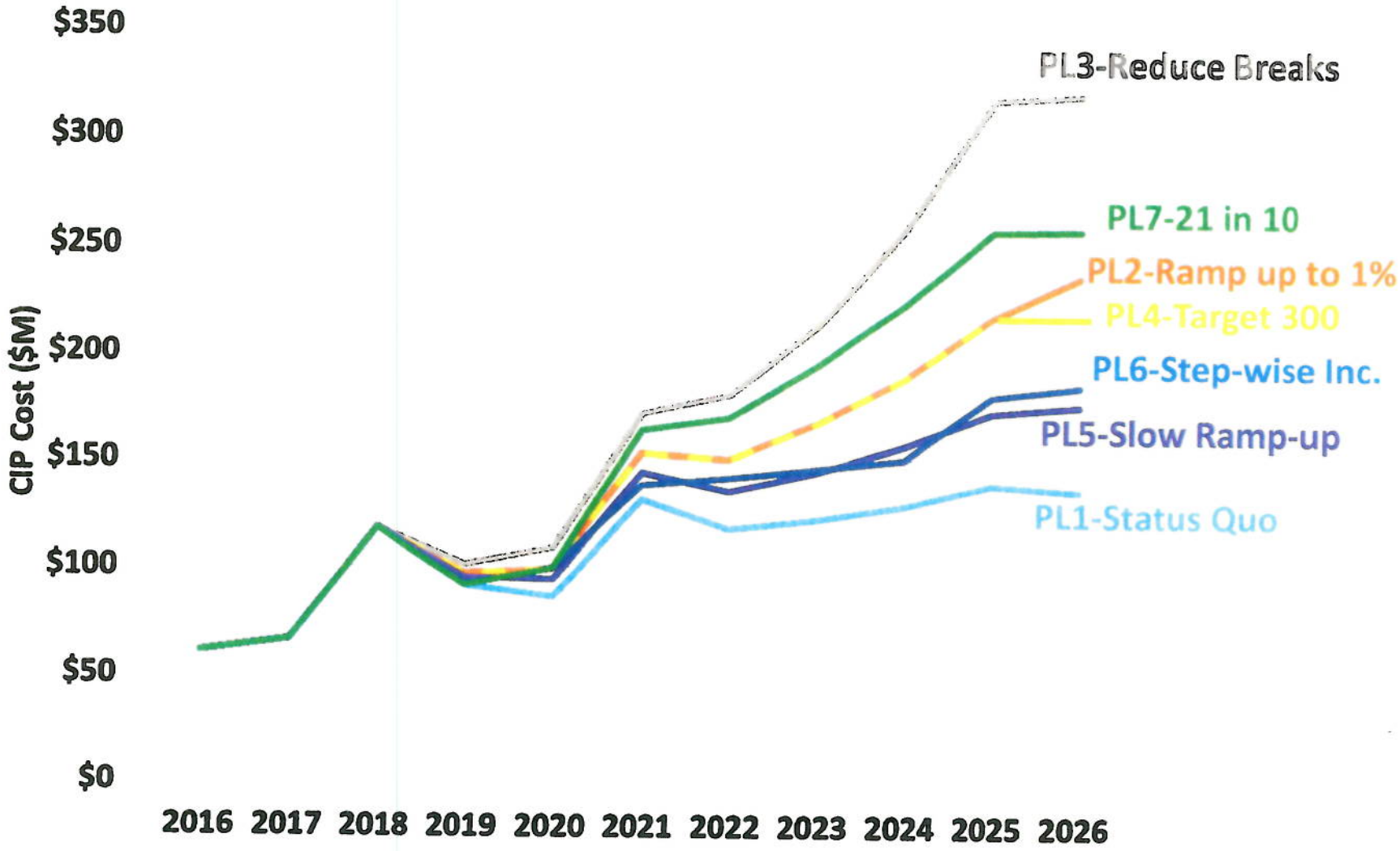


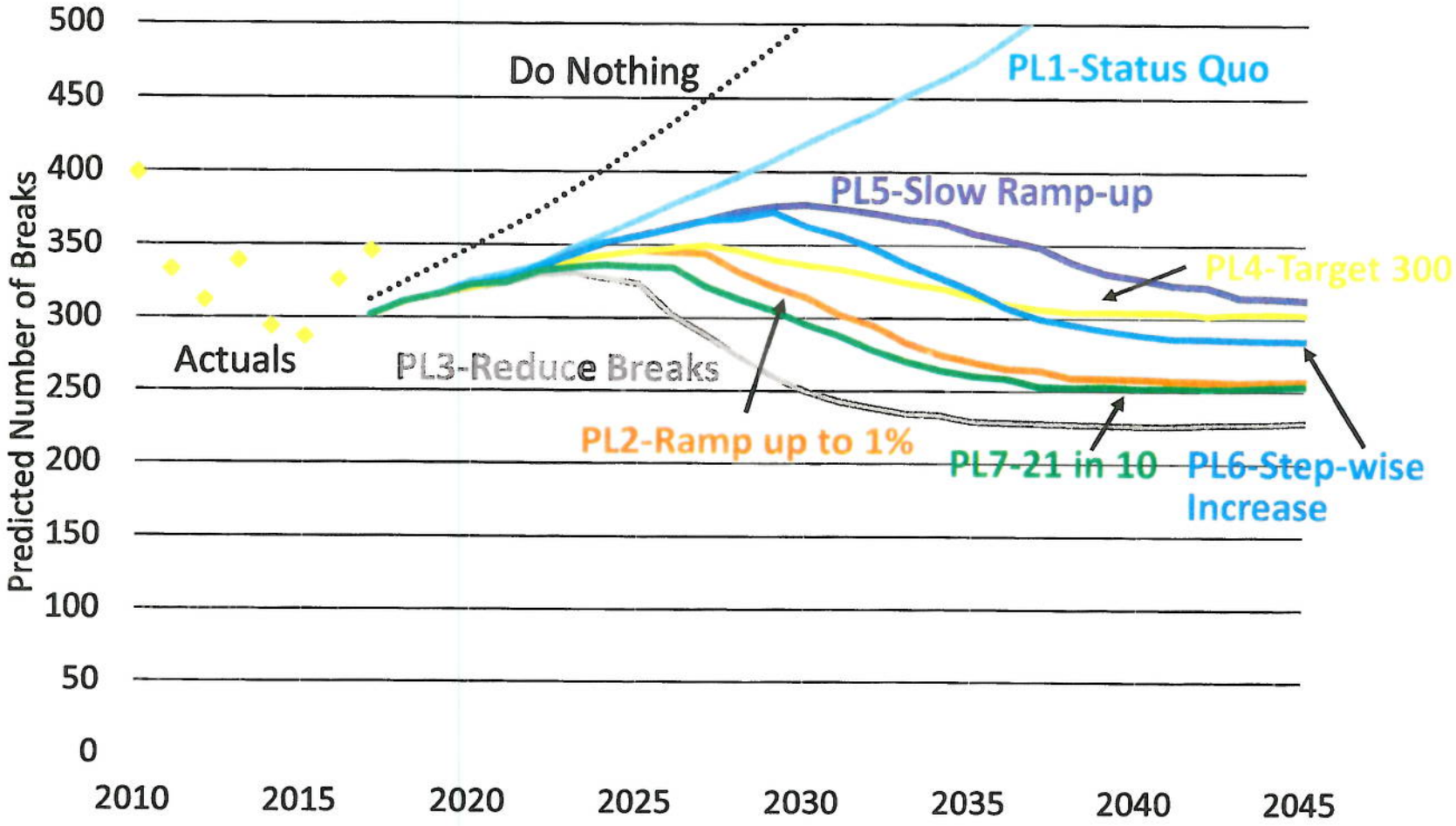
CIP cost for each scenario (non-escalated)



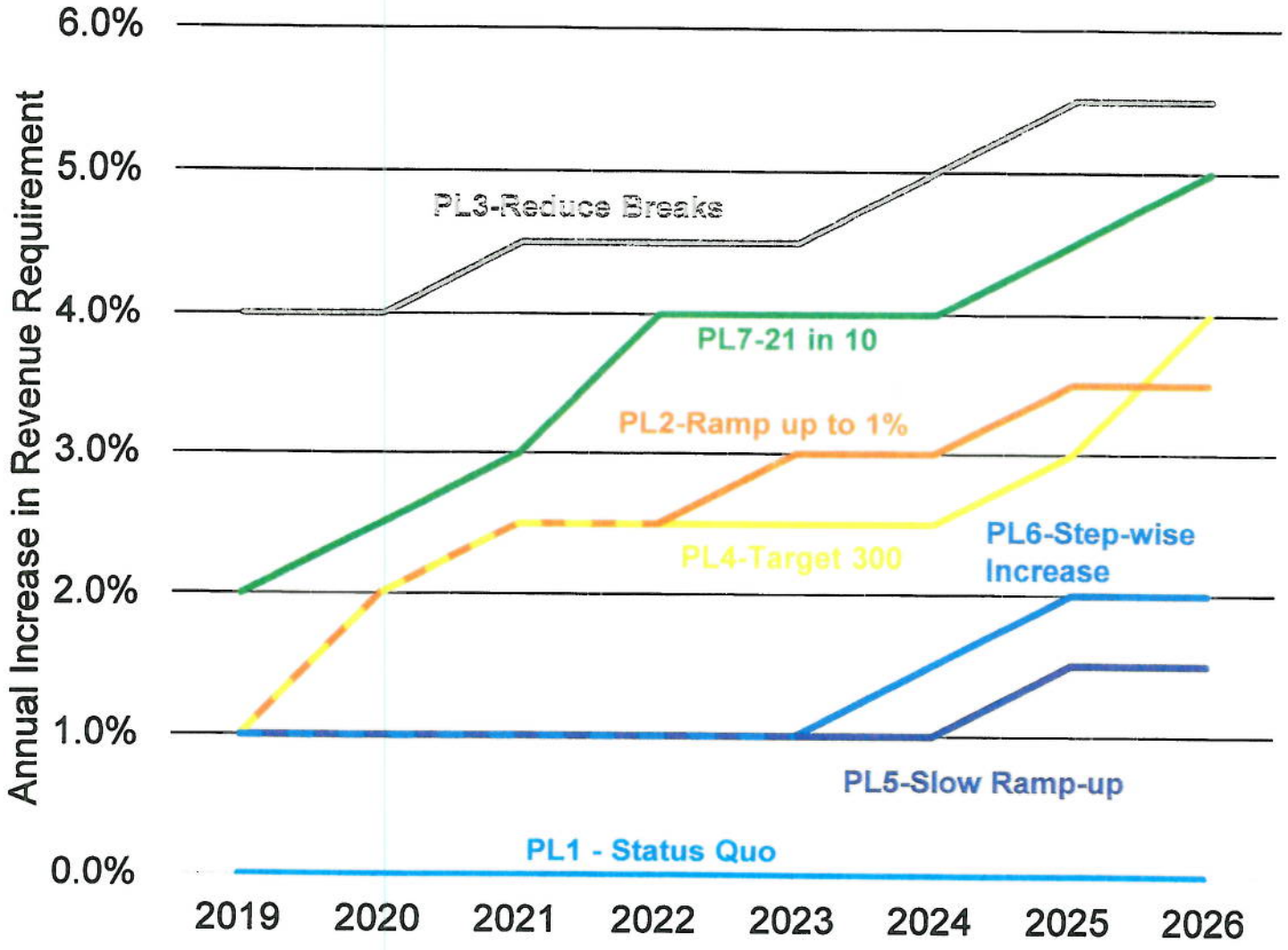
CIP cost for each scenario (escalated at 3% per year)



Main break projections for each scenario



Annual increase in revenue requirement for each scenario

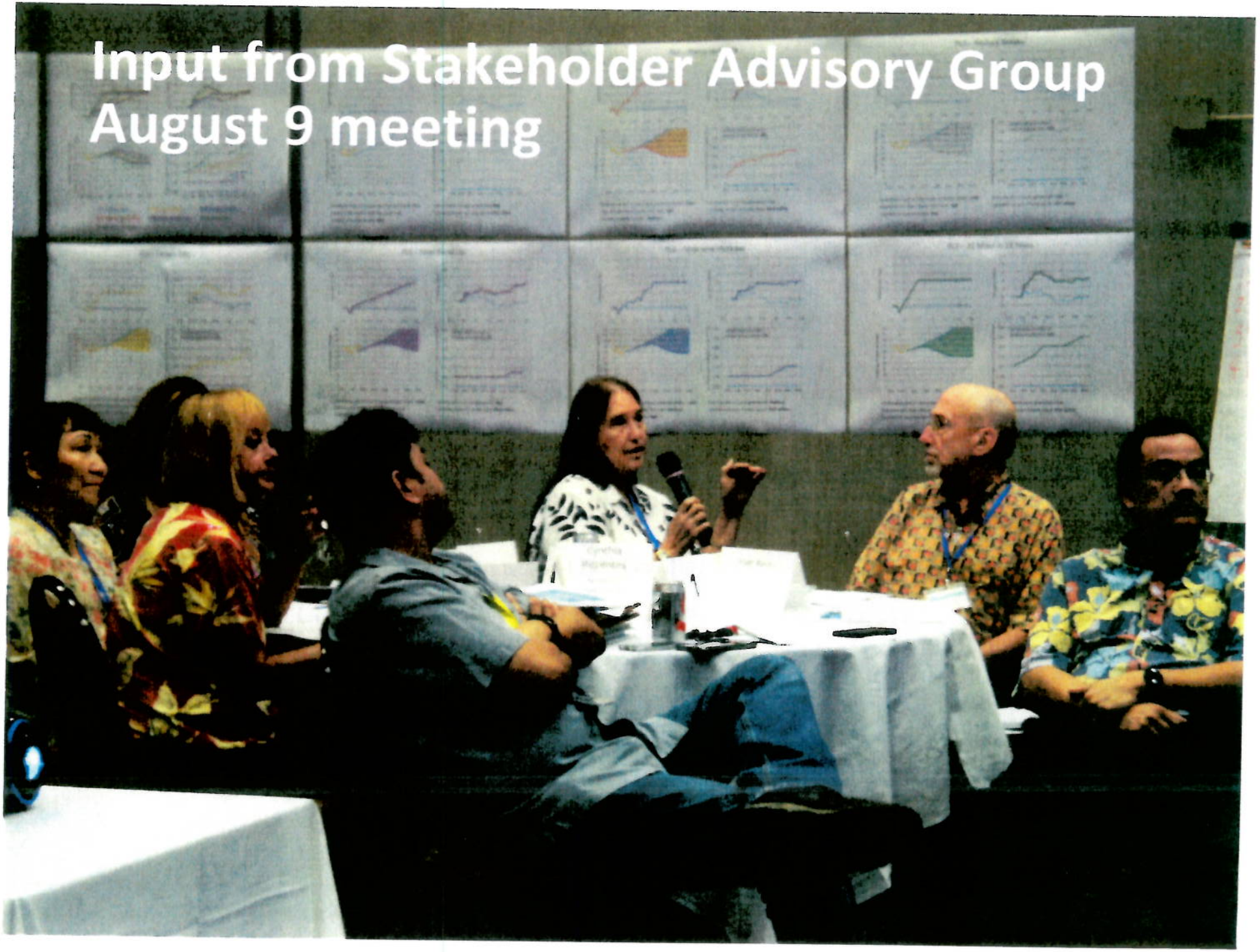


Measurable criteria to consider

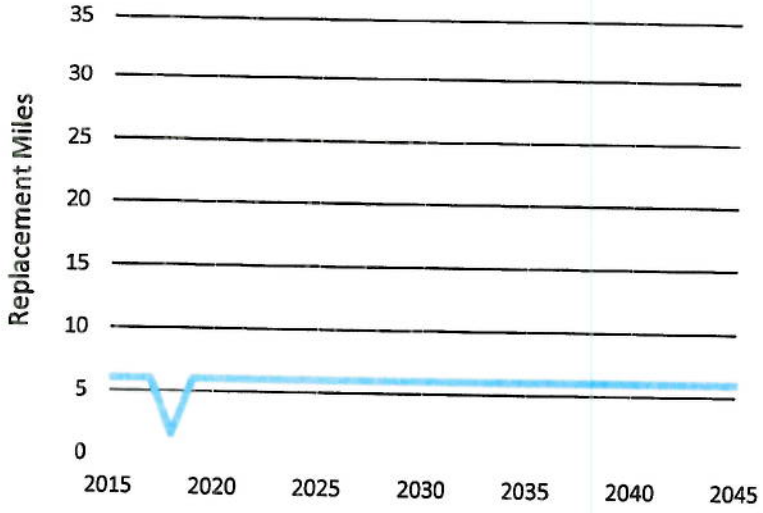
- Number of pipeline miles replaced
- Capital Improvement Program (CIP) cost
- Number of main breaks prevented
- Increase in revenue requirement
- Amount of bonds issued
- Alignment with Water Master Plan goals
  - Target 300 main breaks per year
  - Increase pipeline replacement to 21 miles per year

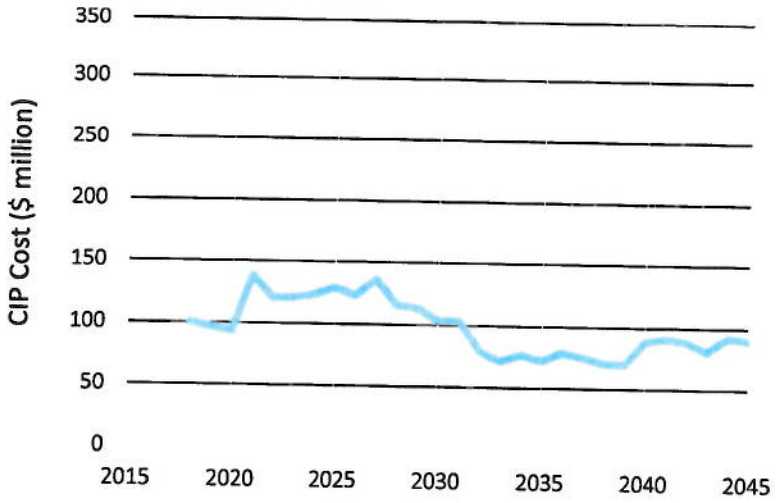
Subjective criteria to consider

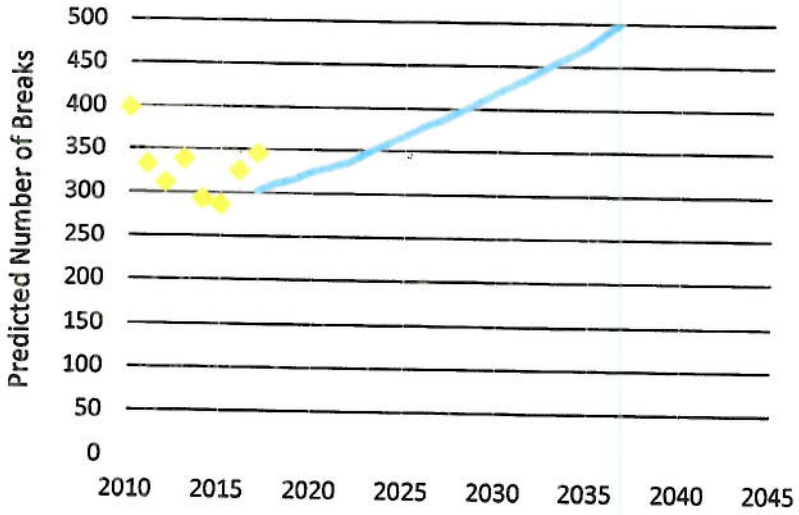
- Feasibility of Implementation
  - Internal resources/hiring/training limitations
  - Consultant/contractor/material supply capacities
  - Traffic/roadway/business disruptions
- Shifting burden to future generations
  - Lower costs for us today
  - Increasing number of main breaks in the future
  - Higher costs for our children and their children

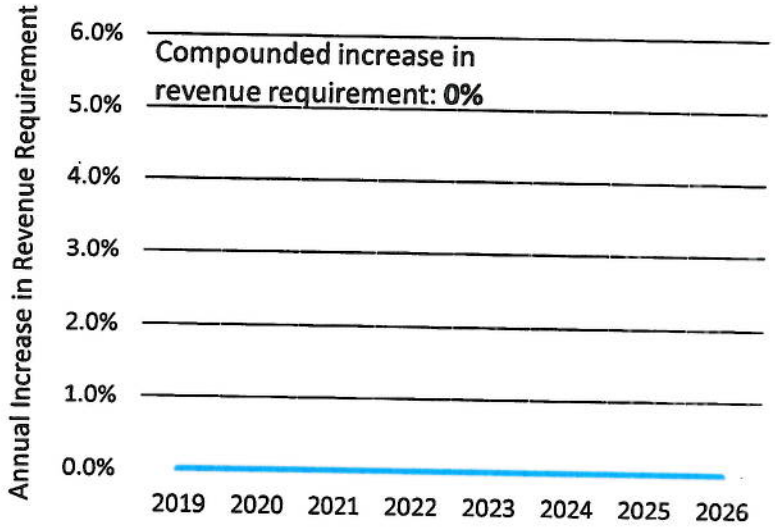

Input from Stakeholder Advisory Group
August 9 meeting

PL1 – Status Quo









Estimated number of main breaks prevented (2045): **N/A**

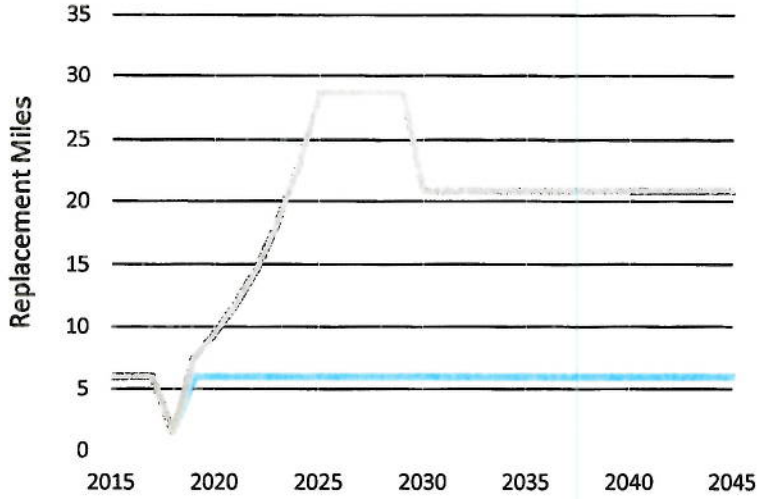
Alignment with Water Master Plan Goals: **Low**

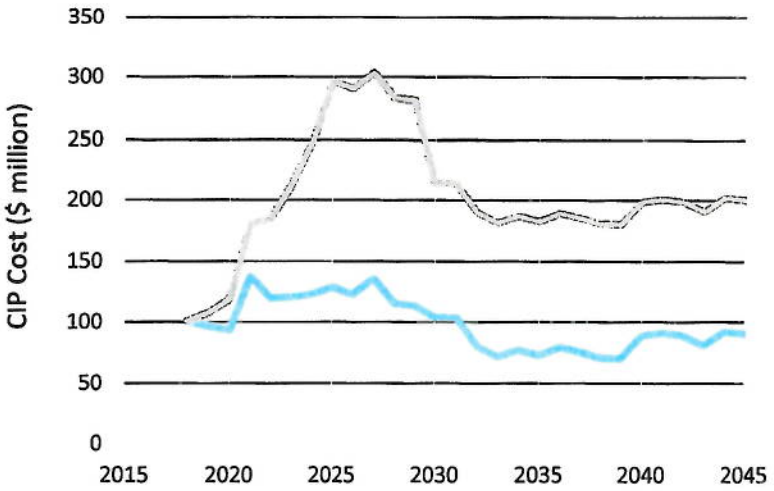
Feasibility of implementation: **High**

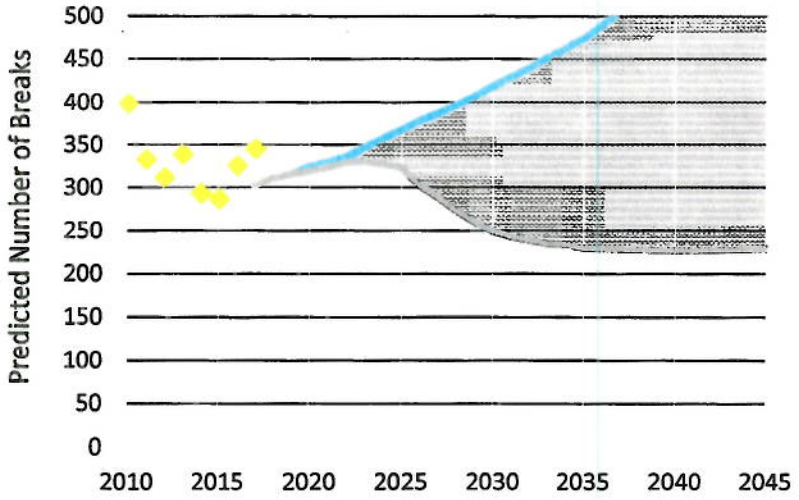
Shift of burden to future generations: **High**

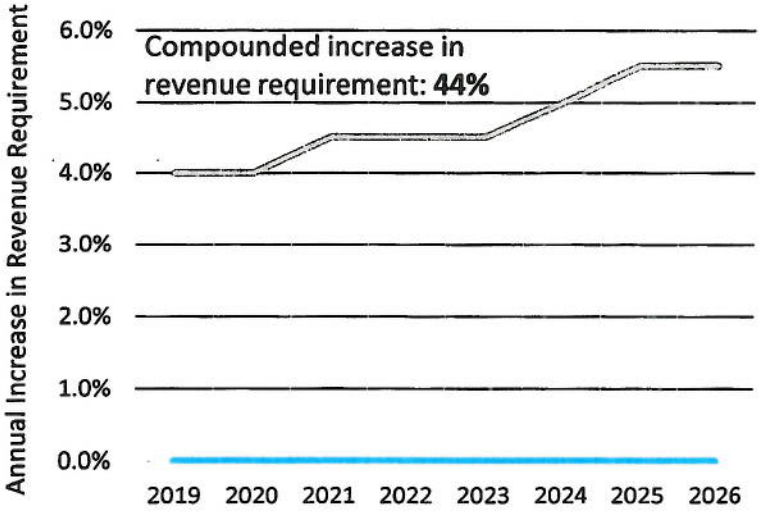
Cumulative amount of bonds issued: **$396 million**

PL3 – Reduce Breaks









Estimated number of main breaks prevented (2045): **4,920**

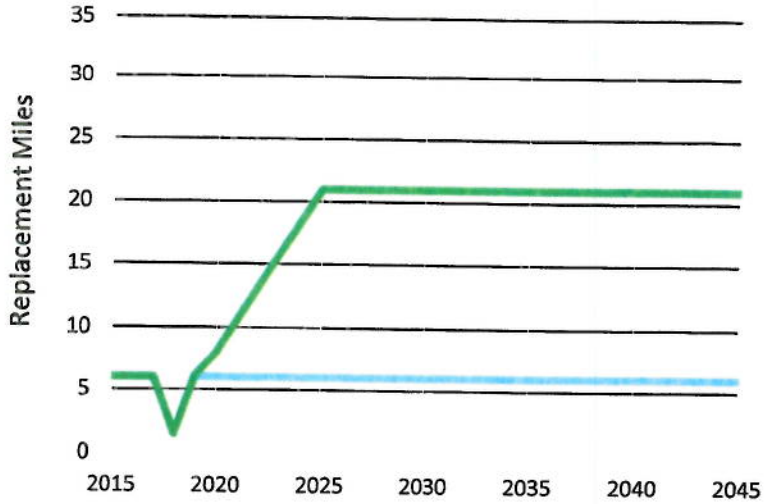
Alignment with Water Master Plan Goals: **High**

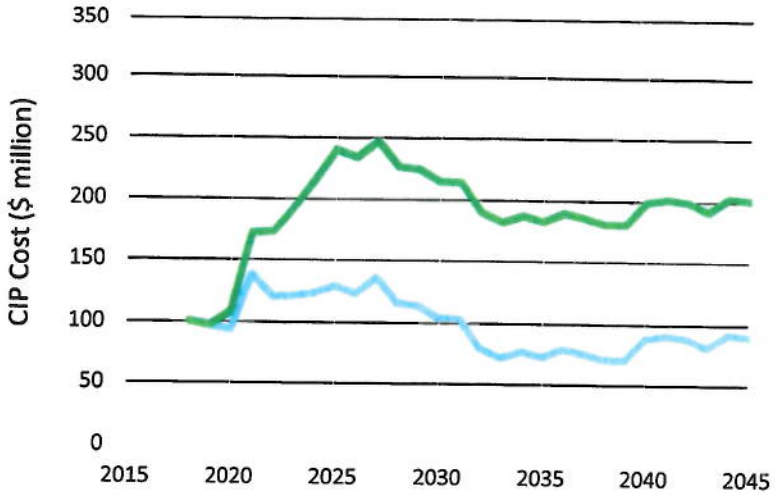
Feasibility of implementation: **Low**

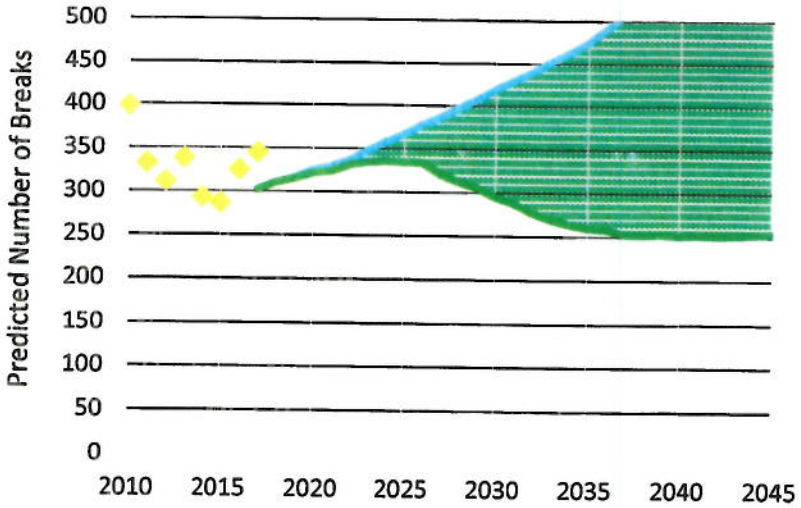
Shift of burden to future generations: **Low**

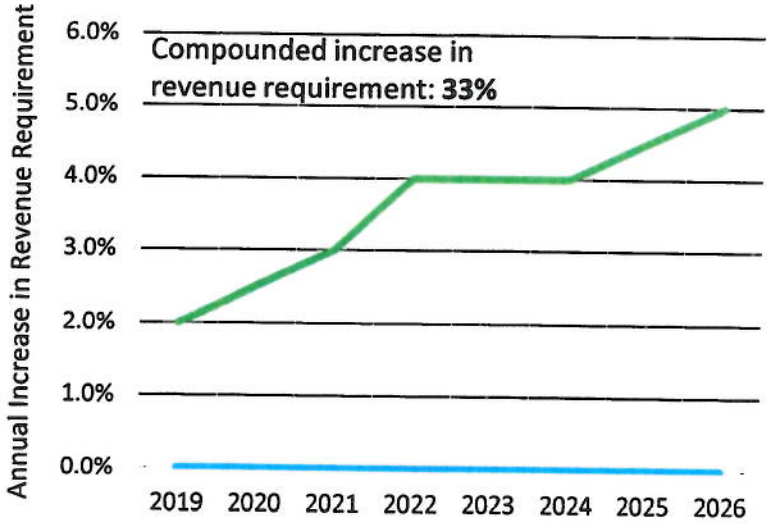
Cumulative amount of bonds issued: **$757 million**

PL7 – 21 Miles in 10 Years









Estimated number of main breaks prevented (2045): **4,251**

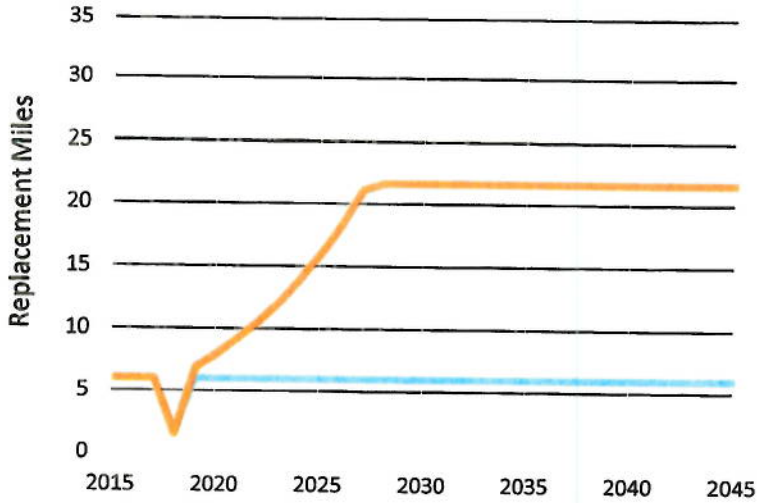
Alignment with Water Master Plan Goals: **High**

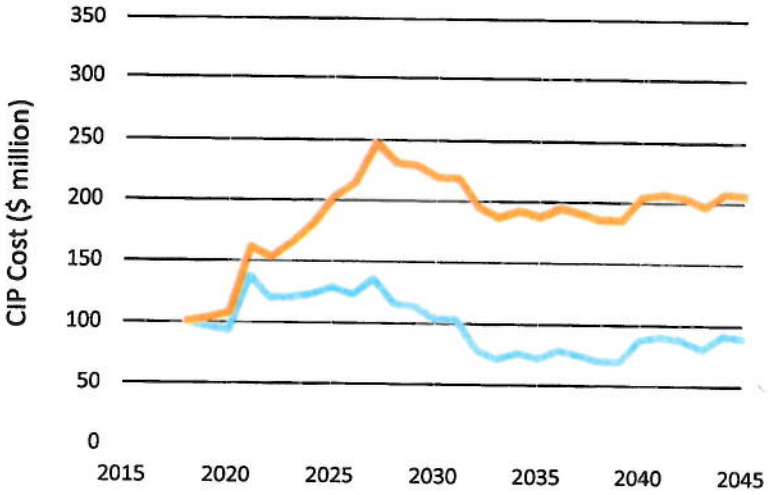
Feasibility of implementation: **Low**

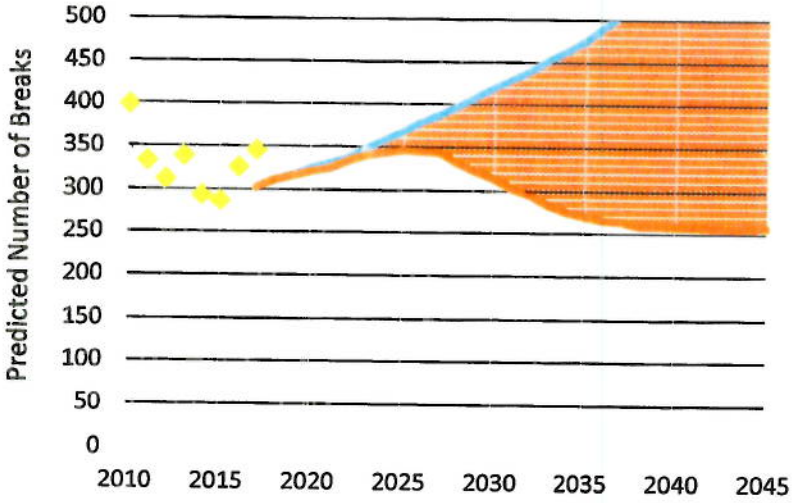
Shift of burden to future generations: **Low**

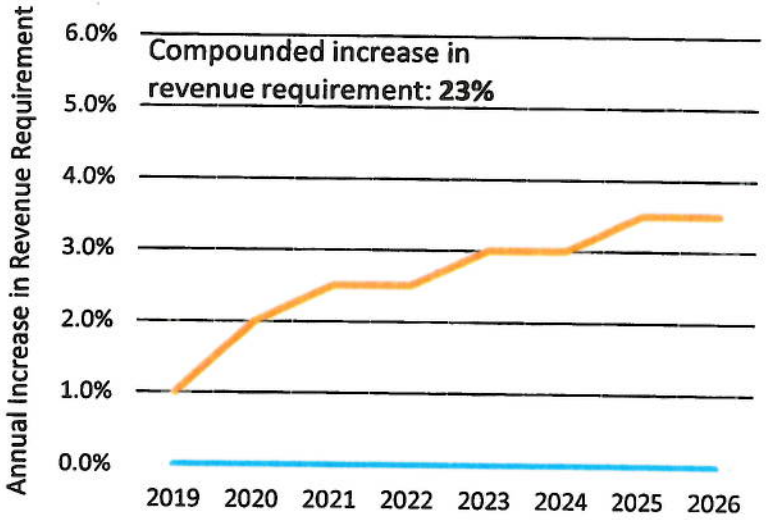
Cumulative amount of bonds issued: **$651 million**

PL2 – Ramp up to 1%









Estimated number of main breaks prevented (2045): **4,025**

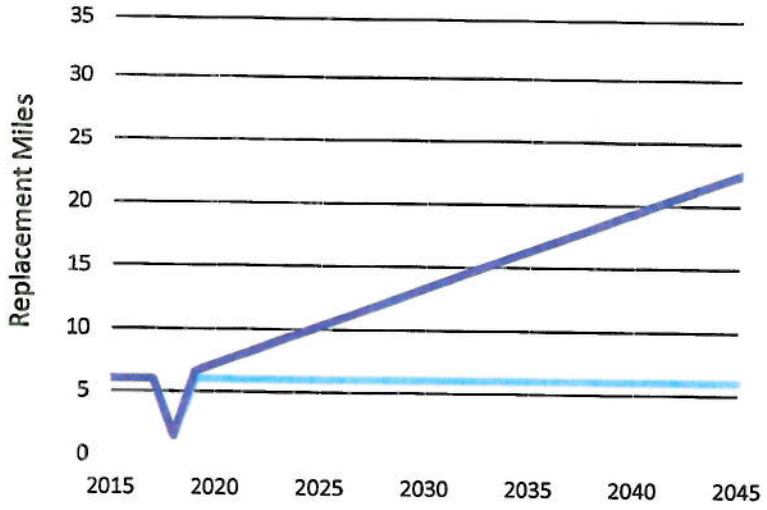
Alignment with Water Master Plan Goals: **High**

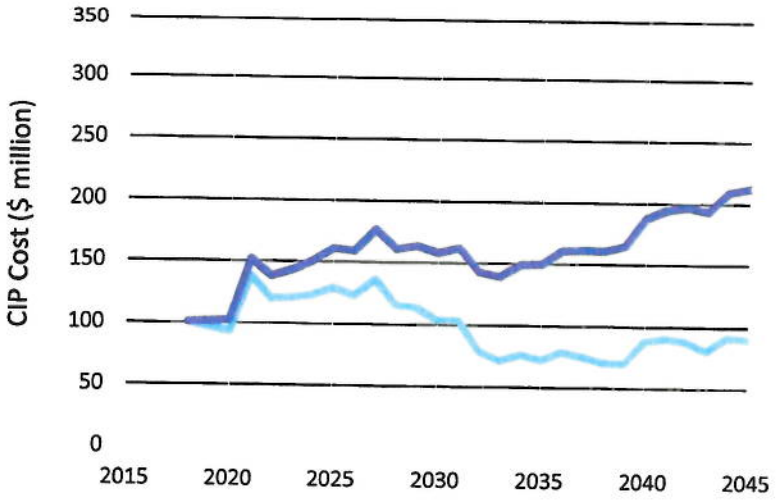
Feasibility of implementation: **Medium**

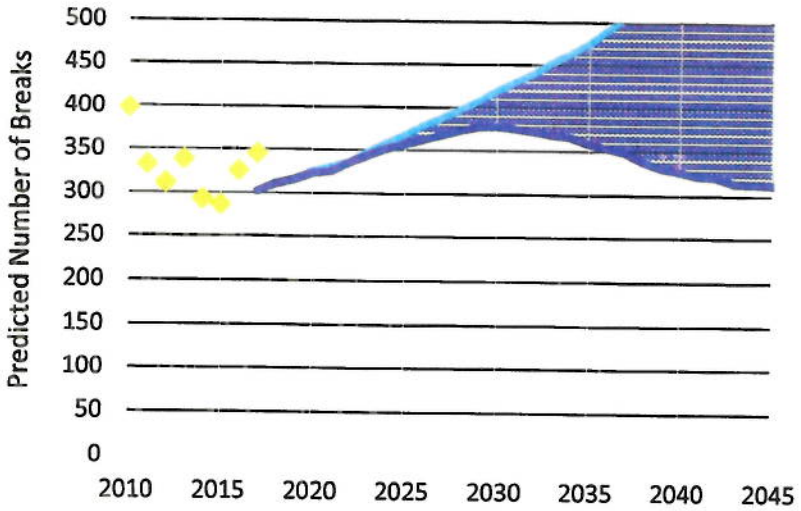
Shift of burden to future generations: **Low**

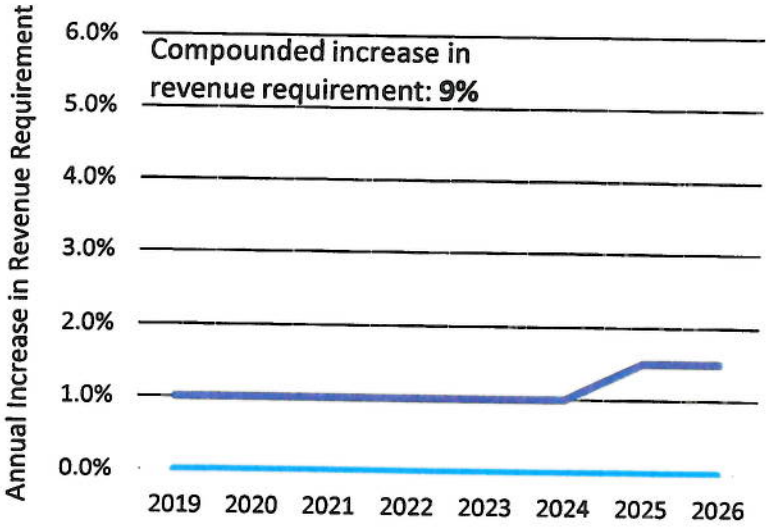
Cumulative amount of bonds issued: **$576 million**

PL5 – Slow Ramp Up









Estimated number of main breaks prevented (2045): **2,680**

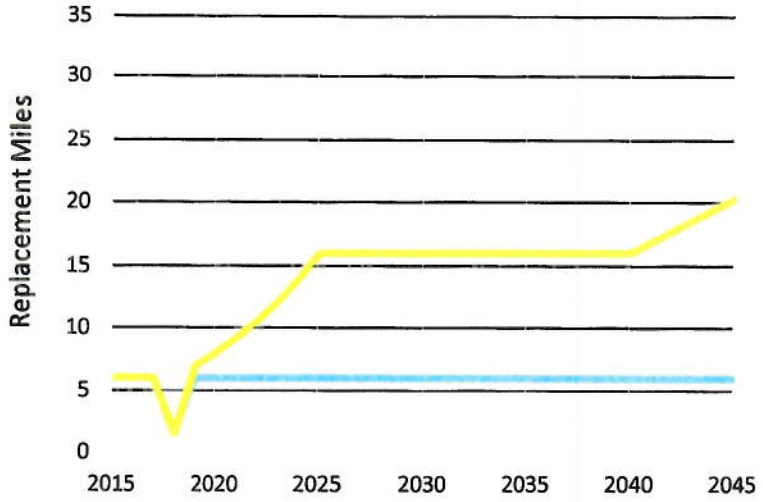
Alignment with Water Master Plan Goals: **Low**

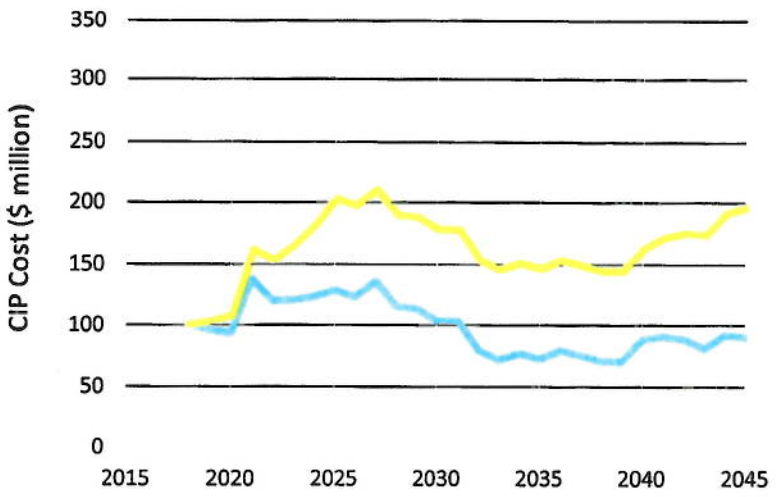
Feasibility of implementation: **High**

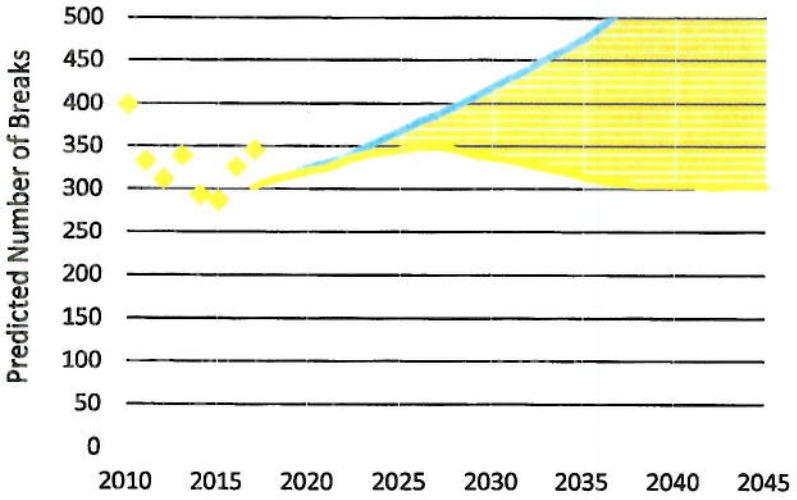
Shift of burden to future generations: **High**

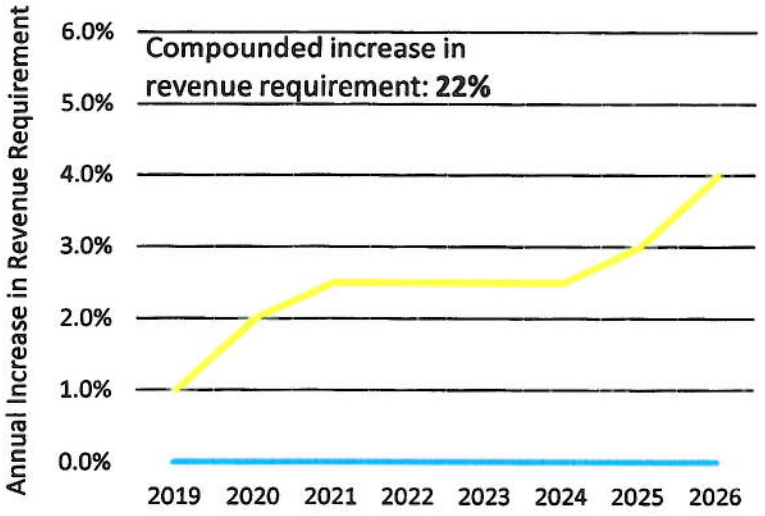
Cumulative amount of bonds issued: **$480 million**

PL4 – Target 300









Estimated number of main breaks prevented (2045): **3,306**

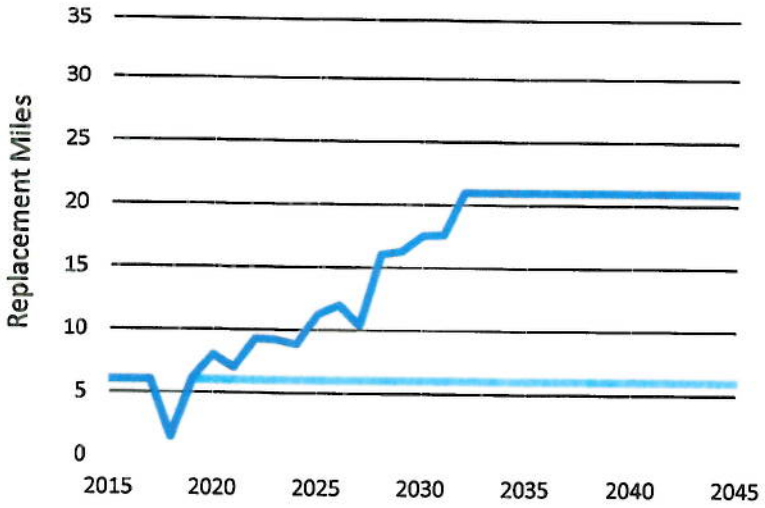
Alignment with Water Master Plan Goals: **Medium**

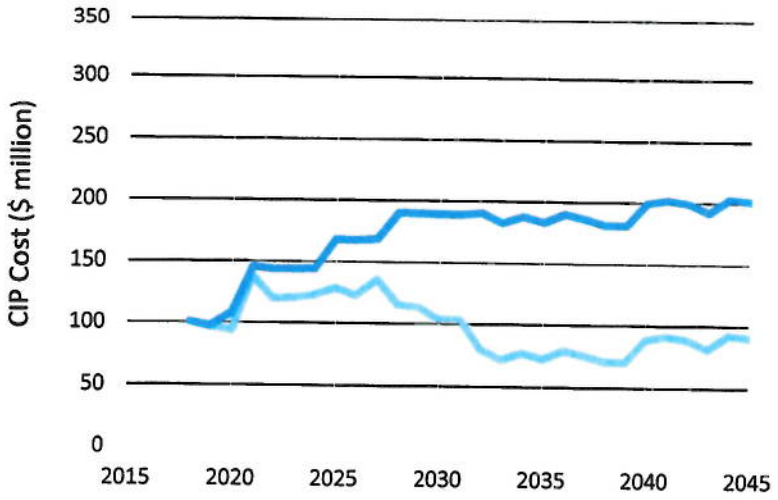
Feasibility of implementation: **Medium**

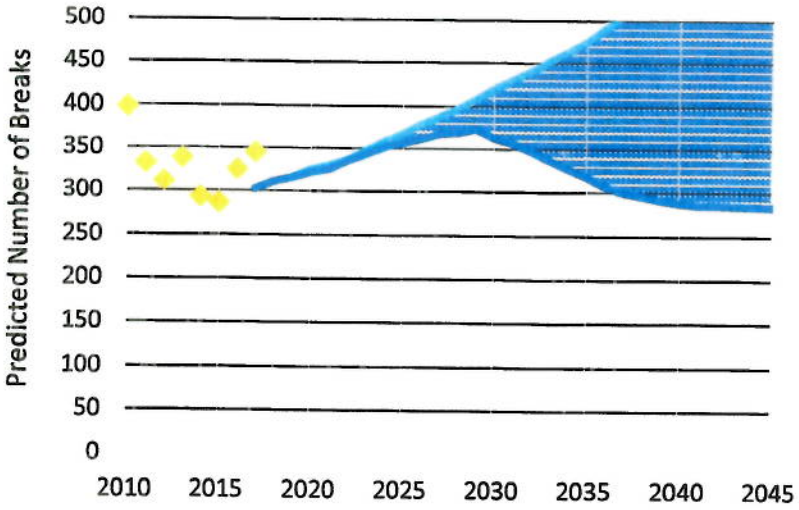
Shift of burden to future generations: **Medium**

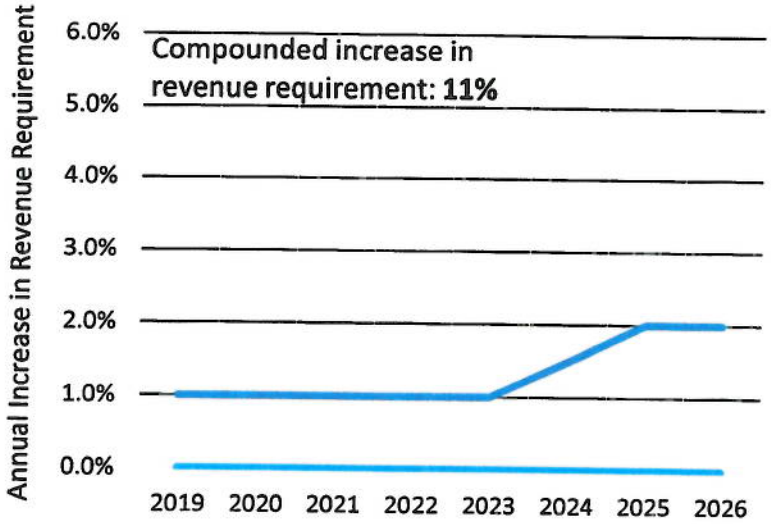
Cumulative amount of bonds issued: **$566 million**

PL6 – Step-wise Increase









Estimated number of main breaks prevented (2045): **3,232**

Alignment with Water Master Plan Goals: **Medium**

Feasibility of implementation: **High**

Shift of burden to future generations: **Medium**

Cumulative amount of bonds issued: **$487 million**

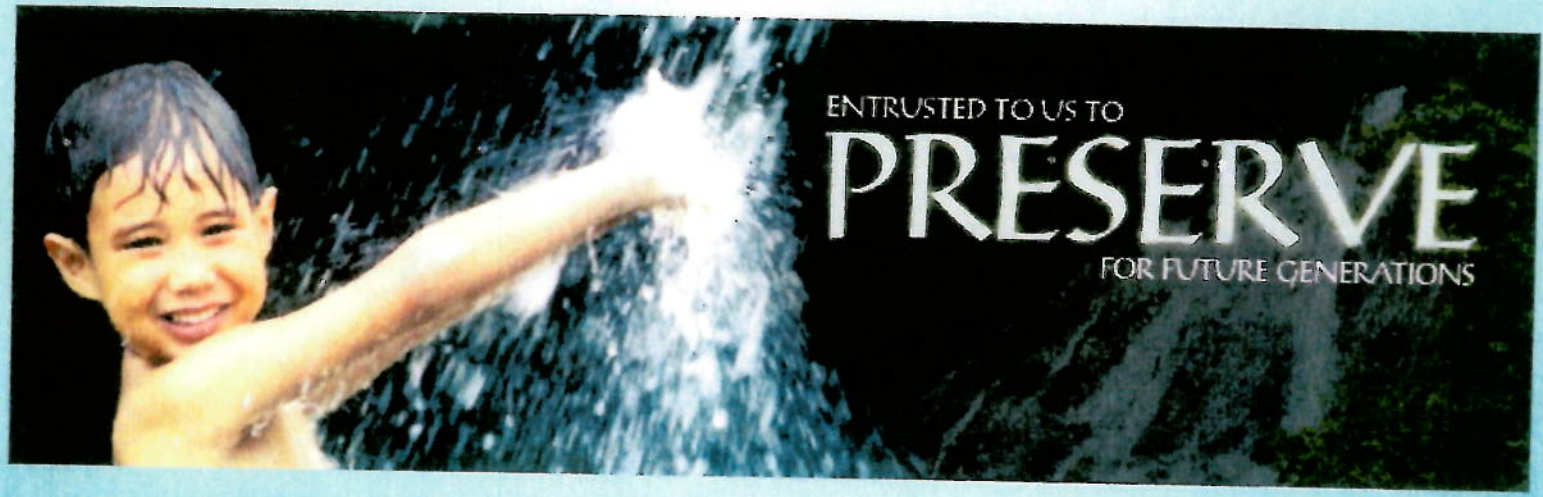
For your consideration

- What overall impressions do you have?
- Should BWS increase its current rate of pipeline replacement?
- If so, what scenario would you recommend, and why?
- What scenario(s) would you recommend against, and why?

WATER FOR LIFE

Safe, dependable, and affordable water now and into the future

Board of Water Supply
City and County of Honolulu



Mahalo!

ITEM FOR INFORMATION NO. 2

"August 28, 2017

FINANCIAL UPDATE

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Financial Update for the Quarter Ended June 30, 2017

The following Board of Water Supply's financial reports and graphs are attached:

- Budget vs Actual Revenue and Expense Totals
- Statement of Revenues, Expenses and Change in Net Assets
- Current Quarter Statement of Revenues, Expenses and Change in Net Assets
- Balance Sheet
- Budget vs Actual Appropriation Budget – Total BWS Summary
- Graph Representing Operating Expenditures by Category
- Graphs of Total Budgeted Operating Expenditures and Total Budgeted Operating Revenues

Respectfully submitted,

/s/ ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Attachments"

The foregoing was for information only.

DISCUSSION: Joe Cooper, Waterworks Controller, gave the presentation. There were no comments or discussion.

Budget vs. Actual
Revenue and Expense Totals
As of June 30, 2017

	YTD Actuals	YTD Budget	Favorable/ (Unfavorable) Variance
Revenues	235,111,000	230,802,000	4,309,000
Operating Expenses	(169,365,000)	(210,912,000)	41,547,000
Net Revenues (expenditures)	65,746,000	19,890,000	45,856,000

Board Of Water Supply
Statement of Revenues, Expenses And Change In Net Assets
As of June 30, 2017

Current Month Actual	% Revenue	Last Year Actual	% Revenue	Description	Year to Date Actual	% Revenue	Last Year to Date Actual	% Revenue	% Change
				REVENUE					
18,241,149.28	100.00	18,827,912.60	100.00	OPERATING REVENUE	231,757,650.12	100.00	238,696,326.52	100.00	2.91-
18,241,149.28	100.00	18,827,912.60	100.00	REVENUE	231,757,650.12	100.00	238,696,326.52	100.00	2.91-
				OPERATING EXPENSES					
2,957,341.48-	16.21	2,899,172.14-	15.40	LABOR COSTS	34,764,547.81-	15.00	32,558,181.89-	13.64	6.78
2,259,005.20-	12.38	3,775,300.28-	20.05	SERVICES	20,792,192.39-	8.97	20,224,177.21-	8.47	2.81
848,561.38-	4.65	724,592.56	3.85	SUPPLIES	4,574,067.40-	1.97	4,317,554.10-	1.81	5.94
31,391.01-	.17	32,277.62-	.17	EDUCATION & TRAINING	209,161.00-	.09	172,389.72-	.07	21.33
1,741,591.92-	9.55	4,702,150.23-	24.97	UTILITIES	19,153,873.35-	8.26	21,303,459.92-	8.92	10.09-
60,974.23-	.33	111,033.45-	.59	REPAIR AND MAINTENANCE	3,179,053.44-	1.37	2,041,361.87-	.86	55.73
1,409,474.48-	7.73	244,044.80	1.30	MISC	17,319,981.95-	7.47	17,656,564.69-	7.40	1.91-
363,866.76	1.99	1,027,131.61	5.46	RETIREMENT SYSTEM CONTRIBUTIO	21,990,100.84-	9.49	22,070,242.80-	9.25	.36-
29,838.25-	.16	2,427,003.94-	12.89	MISC EMPLOYEES' BENEFITS	619,550.21-	.27	2,092,854.83-	.88	70.40-
8,974,311.19-	49.20	11,951,168.69-	63.48	OPERATING EXPENSES	122,602,528.39-	52.90	122,436,787.03-	51.29	.14
24,349.69	.13	9,879,245.97	52.47	NON OPERATING REVENUE AND EXPE	8,705,950.42-	3.76	998,002.82-	.42	772.34
1,959,682.66	10.74	5,918,423.75	31.43	CONTRIBUTION IN AID	22,396,459.21	9.66	18,915,888.06	7.92	18.40
4,245,597.75-	23.27	19,977,898.37-	106.11	OTHER EXPENSES	52,425,776.86-	22.62	61,275,724.48-	25.67	14.44-
7,005,272.69	38.40	2,696,515.26	14.32	Change In Net Assets	70,419,853.66	30.39	72,901,700.25	30.54	3.40-

Board Of Water Supply
Statement of Revenues, Expenses And Change In Net Assets
As of June 30, 2017

Current Quarter Actual	% Revenue	Last Year Quarter Actual	% Revenue	Description	Year to Date Actual	% Revenue	Last Year to Date Actual	% Revenue	% Change
				REVENUE					
56,768,138	100.00	60,189,367	100.00	OPERATING REVENUE	231,757,650	100.00	238,696,327	100.00	-2.91
56,768,138	100.00	60,189,367	100.00	REVENUE	231,757,650	100.00	238,696,327	100.00	-2.91
				OPERATING EXPENSES					
-8,742,012	15.40	-8,401,765	13.96	LABOR COSTS	-34,764,548	15.00	-32,558,182	13.64	6.78
-6,644,496	11.70	-7,922,606	13.16	SERVICES	-20,792,192	8.97	-20,224,177	8.47	2.81
-1,508,712	2.66	-11,170	0.02	SUPPLIES	-4,574,067	1.97	-4,317,554	1.81	5.94
-81,351	0.14	-58,482	0.10	EDUCATION & TRAINING	-209,161	0.09	-172,390	0.07	21.33
-5,479,723	9.65	-7,140,733	11.86	UTILITIES	-19,153,873	8.26	-21,303,460	8.92	-10.09
-1,919,529	3.38	-385,653	0.64	REPAIR AND MAINTENANCE	-3,179,053	1.37	-2,041,362	0.86	55.73
-4,175,239	7.35	-1,330,681	2.21	MISC	-17,319,982	7.47	-17,656,565	7.40	-1.91
-2,619,022	4.61	-3,757,807	6.24	RETIREMENT SYSTEM CONTRIBUTIO	-21,990,101	9.49	-22,070,243	9.25	-0.36
-45,584	0.08	-2,300,871	3.82	MISC EMPLOYEES' BENEFITS	-619,550	0.27	-2,092,855	0.88	-70.40
-31,215,669	54.99	-31,309,767	52.02	OPERATING EXPENSES	-122,602,528	52.90	-122,436,787	51.29	0.14
-369,422	0.65	8,155,338	-13.55	NON OPERATING REVENUE AND EXPE	-8,705,950	3.76	-998,003	0.42	772.34
6,416,922	-11.30	10,245,869	-17.02	CONTRIBUTION IN AID	22,396,459	9.66	18,915,888	7.92	18.40
-13,111,611	23.10	-27,721,408	46.06	OTHER EXPENSES	-52,425,777	22.62	-61,275,724	25.67	-14.44
18,488,360	32.57	19,559,398	-32.50	Change In Net Assets	70,419,854	30.39	72,901,700	30.54	-3.40

Board Of Water Supply
Balance Sheet
As of June 30, 2017

Description	Amounts Current	Last Month End	Last Year End	Change This Month	This Year
ASSETS					
CURRENT ASSETS	75,181,610.88	64,416,241.16	57,515,504.80	10,765,369.72	17,666,106.08
RESTRICTED ASSETS	9,949,762.51	22,001,696.83	17,400,189.89	-12,051,934.32	-7,450,427.38
INVESTMENTS	371,206,509.08	361,877,667.03	338,648,776.43	9,328,842.05	32,557,732.65
OTHER ASSETS	14,634,167.87	15,403,146.09	19,731,067.69	-768,978.22	-5,096,899.82
PROPERTY / PLANT	1,139,952,289.74	1,138,209,157.34	1,121,711,210.90	1,743,132.40	18,241,078.84
DEFERRED OUTFLOWS OF RESOURCE	23,588,492.00	23,588,492.00	23,588,492.00	0.00	0.00
TOTAL ASSETS	1,634,512,832.08	1,625,496,400.45	1,578,595,241.71	9,016,431.63	55,917,590.37
LIABILITIES					
CURRENT LIABILITIES	21,930,550.72	19,217,899.44	34,111,255.10	2,712,651.28	-12,180,704.38
OTHER LIABILITIES	38,174,559.64	38,342,910.82	37,964,054.97	-168,351.18	210,504.67
BONDS PAYABLE, NONCURRENT	286,603,808.19	287,136,949.35	287,052,205.77	-533,141.16	-448,397.58
NET PENSION LIABILITY	81,526,553.00	81,526,553.00	81,526,553.00	0.00	0.00
DEFERRED INFLOWS OF RESOURCES	8,895,996.00	8,895,996.00	8,895,996.00	0.00	0.00
LIABILITIES	437,131,467.55	435,120,308.61	449,550,064.84	2,011,158.94	-12,418,597.29
NET ASSETS					
RETAINED EARNINGS	310,066,805.13	342,407,571.05	301,398,811.67	-32,340,765.92	8,667,993.46
FUND BALANCE	594,633,831.66	594,633,831.66	594,633,831.66	0.00	0.00
RESERVE FOR ENCUMBRANCES	222,260,874.08	189,920,108.16	230,928,867.54	32,340,765.92	-8,667,993.46
CURRENT YEAR CHANGES TO FU	70,419,853.66	63,414,580.97	0.00	7,005,272.69	70,419,853.66
NET ASSETS	1,197,381,364.53	1,190,376,091.84	1,126,961,510.87	7,005,272.69	70,419,853.66
TOTAL LIABILITIES AND NET ASSETS	1,634,512,832.08	1,625,496,400.45	1,576,511,575.71	9,016,431.63	58,001,256.37

Board Of Water Supply
Statement of Revenues, Expenses And Change In Net Assets
As of June 30, 2017

Current Quarter Actual	% Revenue	Last Year Quarter Actual	% Revenue	Description	Year to Date Actual	% Revenue	Last Year to Date Actual	% Revenue	% Change
				REVENUE					
58,989,606	100.00	61,111,988	100.00	OPERATING REVENUE	213,516,501	100.00	219,868,414	100.00	-2.89
58,989,606	100.00	61,111,988	100.00	REVENUE	213,516,501	100.00	219,868,414	100.00	-2.89
				OPERATING EXPENSES					
-8,559,420	14.51	-8,086,974	13.23	LABOR COSTS	-31,807,206	14.90	-29,659,010	13.49	7.24
-6,623,221	11.23	-5,719,779	9.36	SERVICES	-18,533,187	8.68	-16,448,877	7.48	12.67
-850,338	1.44	-1,198,255	1.96	SUPPLIES	-3,725,506	1.74	-5,042,147	2.29	-26.11
-89,571	0.15	-36,047	0.06	EDUCATION & TRAINING	-177,770	0.08	-140,112	0.06	26.88
-5,694,326	9.65	-2,845,508	4.66	UTILITIES	-17,412,281	8.16	-16,601,310	7.55	4.88
-2,011,782	3.41	-472,311	0.77	REPAIR AND MAINTENANCE	-3,118,079	1.46	-1,930,328	0.88	61.53
-4,103,519	6.96	-2,337,929	3.83	MISC	-15,910,507	7.45	-17,900,609	8.14	-11.12
-4,482,938	7.60	-6,275,352	10.27	RETIREMENT SYSTEM CONTRIBUTIO	-22,353,968	10.47	-23,097,374	10.51	-3.22
-74,423	0.13	208,899	-0.34	MISC EMPLOYEES' BENEFITS	-589,712	0.28	334,149	-0.15	-276.48
-32,489,539	55.08	-26,763,257	43.79	OPERATING EXPENSES	-113,628,217	53.22	-110,485,618	50.25	2.84
-248,295	0.42	-3,075,439	5.03	NON OPERATING REVENUE AND EXPE	-8,730,300	4.09	-10,877,249	4.95	-19.74
5,147,531	-8.73	5,972,143	-9.77	CONTRIBUTION IN AID	20,436,777	-9.57	12,997,464	-5.91	57.24
-13,247,067	22.46	-11,540,822	18.88	OTHER EXPENSES	-48,180,179	22.57	-41,297,826	18.78	16.67
18,152,237	30.77	25,704,613	-42.06	Change In Net Assets	63,414,581	29.70	70,205,185	31.93	-9.67

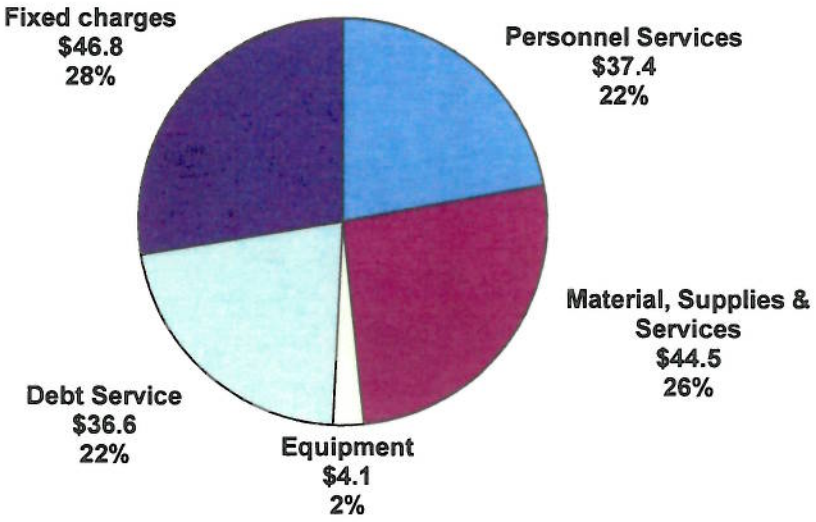
Board Of Water Supply
Balance Sheet
As of June 30, 2017

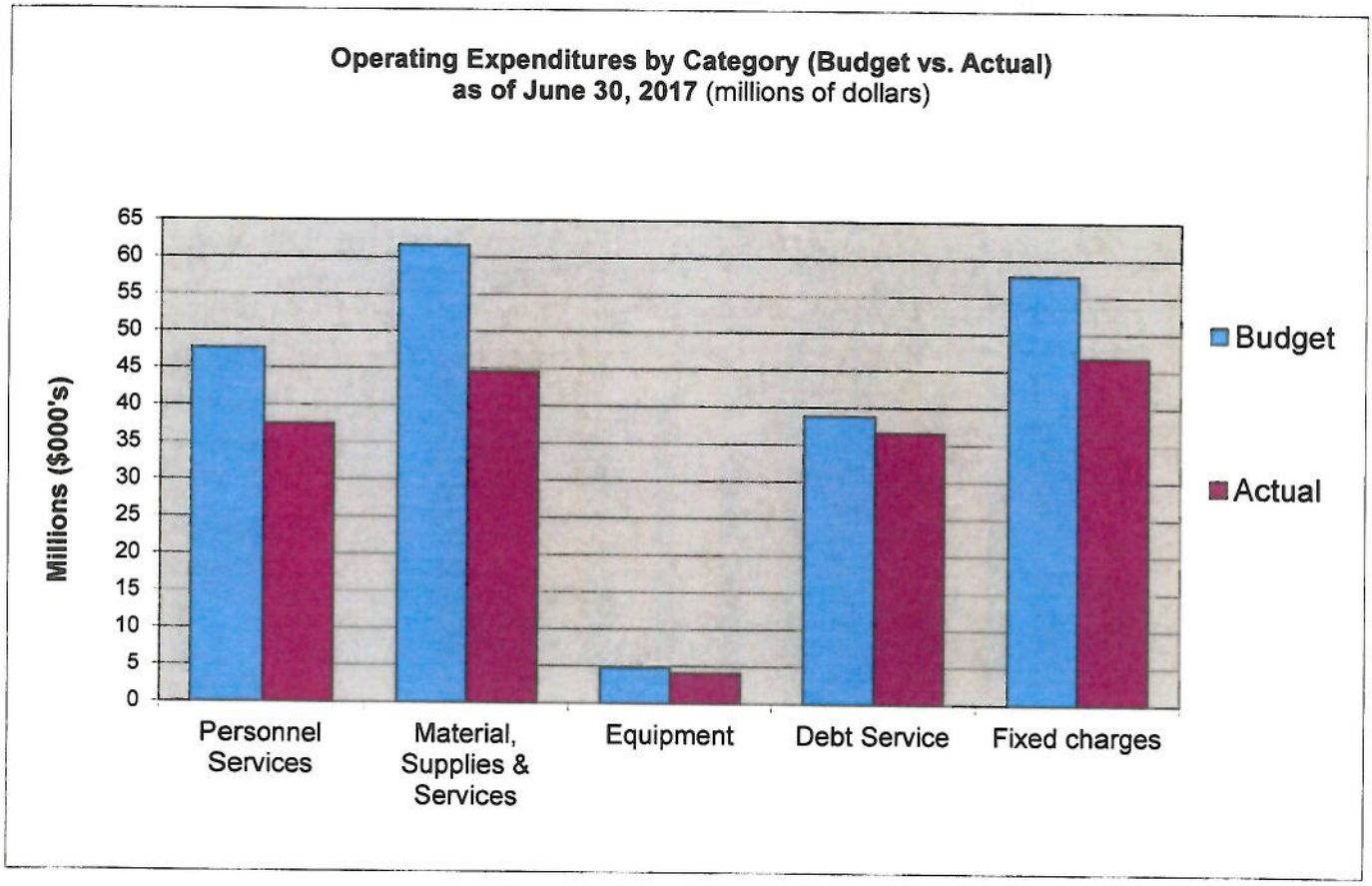
Description	Current	Last Month End	Last Year End	This Month	This Year
	**********	Amounts	********* **********	**********	Change **********
ASSETS					
CURRENT ASSETS	75,181,610.88	64,416,241.16	57,515,504.80	10,765,369.72	17,666,106.08
RESTRICTED ASSETS	9,949,762.51	22,001,696.83	17,400,189.89	-12,051,934.32	-7,450,427.38
INVESTMENTS	371,206,509.08	361,877,667.03	338,648,776.43	9,328,842.05	32,557,732.65
OTHER ASSETS	14,634,167.87	15,403,146.09	19,731,067.69	-768,978.22	-5,096,899.82
PROPERTY / PLANT	1,139,952,289.74	1,138,209,157.34	1,121,711,210.90	1,743,132.40	18,241,078.84
DEFERRED OUTFLOWS OF RESOURCE	23,588,492.00	23,588,492.00	23,588,492.00	0.00	0.00
TOTAL ASSETS	1,634,512,832.08	1,625,496,400.45	1,578,595,241.71	9,016,431.63	55,917,590.37
LIABILITIES					
CURRENT LIABILITIES	21,930,550.72	19,217,899.44	34,111,255.10	2,712,651.28	-12,180,704.38
OTHER LIABILITIES	38,174,559.64	38,342,910.82	37,964,054.97	-168,351.18	210,504.67
BONDS PAYABLE, NONCURRENT	286,603,808.19	287,136,949.35	287,052,205.77	-533,141.16	-448,397.58
NET PENSION LIABILITY	81,526,553.00	81,526,553.00	81,526,553.00	0.00	0.00
DEFERRED INFLOWS OF RESOURCES	8,895,996.00	8,895,996.00	8,895,996.00	0.00	0.00
LIABILITIES	437,131,467.55	435,120,308.61	449,550,064.84	2,011,158.94	-12,418,597.29
NET ASSETS					
RETAINED EARNINGS	310,066,805.13	342,407,571.05	301,398,811.67	-32,340,765.92	8,667,993.46
FUND BALANCE	594,633,831.66	594,633,831.66	594,633,831.66	0.00	0.00
RESERVE FOR ENCUMBRANCES	222,260,874.08	189,920,108.16	230,928,867.54	32,340,765.92	-8,667,993.46
CURRENT YEAR CHANGES TO FU	70,419,853.66	63,414,580.97	0.00	7,005,272.69	70,419,853.66
NET ASSETS	1,197,381,364.53	1,190,376,091.84	1,126,961,510.87	7,005,272.69	70,419,853.66
TOTAL LIABILITIES AND NET ASSETS	1,634,512,832.08	1,625,496,400.45	1,576,511,575.71	9,016,431.63	58,001,256.37

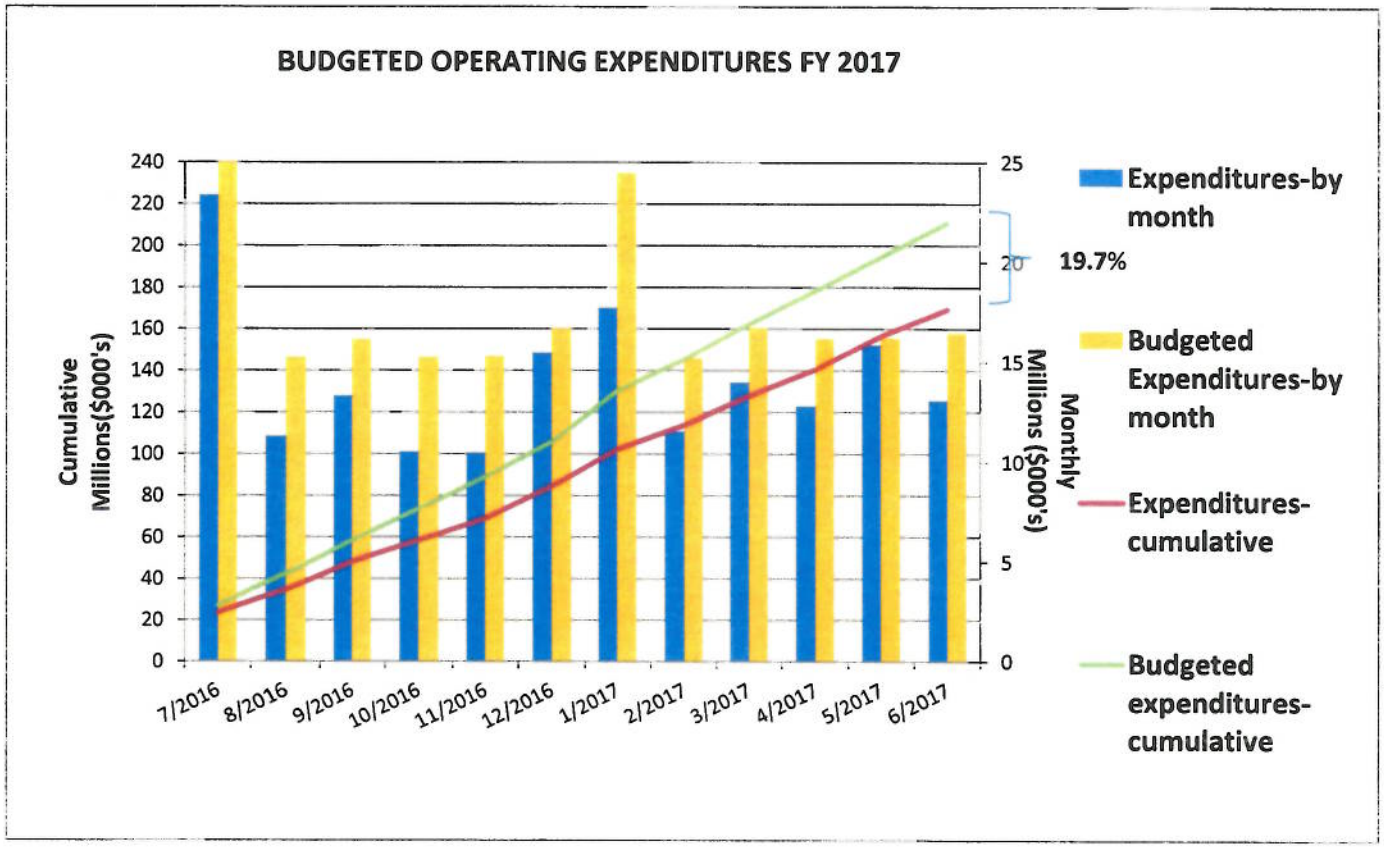
OPER UNIT ALL CIFIS 17820-3021
BUSINESS UNIT ALL AS OF 6/30/2017

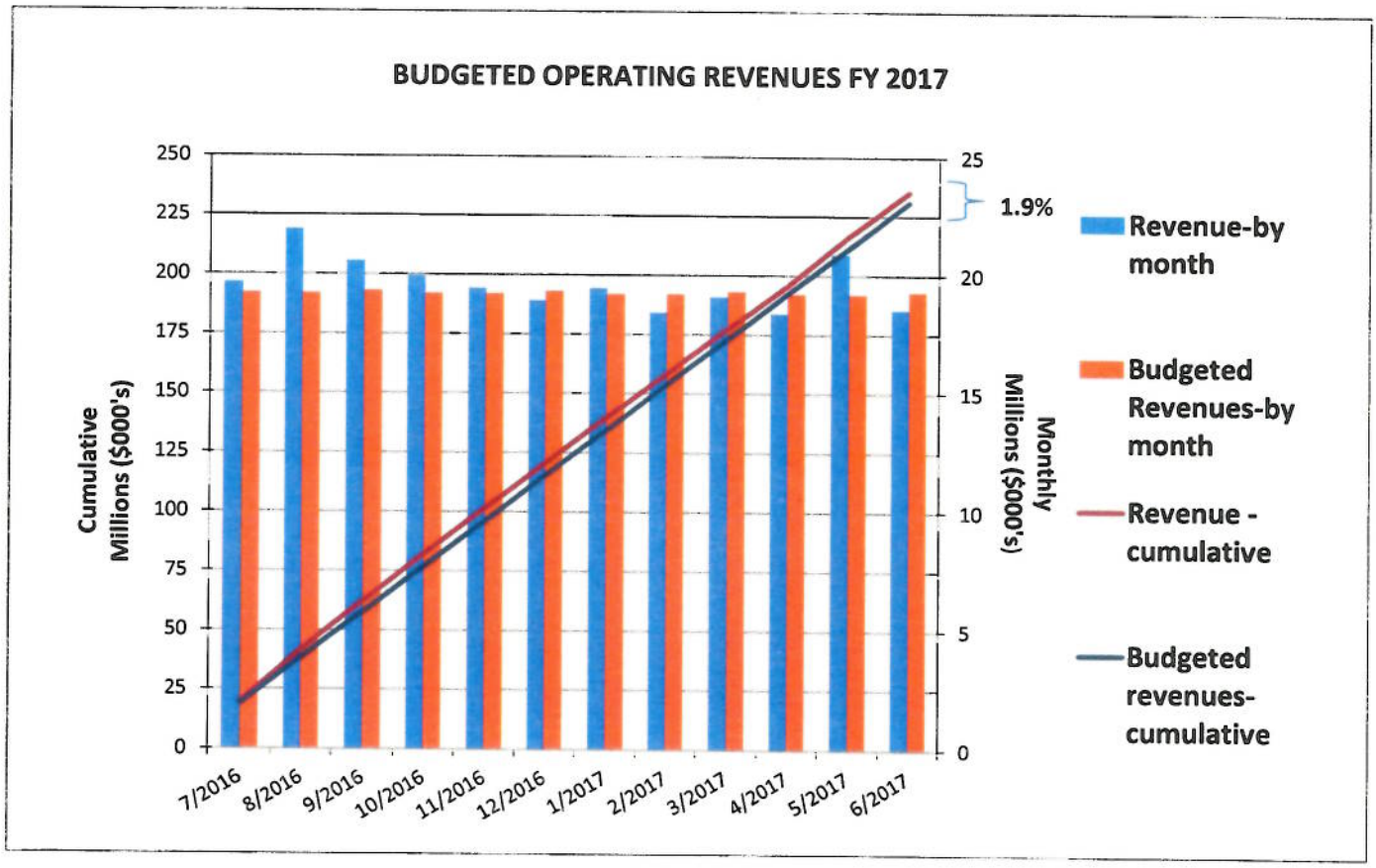
YTD-TO-DATE					FOR THE FISCAL YEAR				
YTD Actuals	YTD Budget	Avail/ (Over)	%	Object Description	Revenues/ Expend	Open Encumb	Annual Budget	Avail/ (Over)	%
235,111	230,802	(4,309)	1.87-	REVENUE	235,111		230,802	(4,309)	1.87-
				OPERATING EXPENSES:					
37,426	47,687	10,261	21.52	Personnel Services	37,426		47,687	10,261	21.52
				MATERIALS AND SUPPLIES					
22,251	26,299	4,048	15.39	Services	12,614	9,637	26,299	4,048	15.39
9,570	19,346	9,776	50.53	Supplies	8,160	1,410	19,346	9,776	50.53
423	882	459	52.04	Education & Training	327	96	882	459	52.04
	13	13	100.00	Utilities			13	13	100.00
3,416	2,972	(444)	14.94-	Repairs & Maint	3,008	408	2,972	(444)	14.94-
8,859	12,123	3,264	26.92	Misc	7,921	938	12,123	3,264	26.92
4,079	4,807	728	15.14	Equipment	770	3,309	4,807	728	15.14
36,589	38,865	2,276	5.86	Debt Service	36,589		38,865	2,276	5.86
				FIXED CHARGES:					
19,534	30,227	10,693	35.38	Utilities	19,531	3	30,227	10,693	35.38
3,300	3,300			Case Fees	3,300		3,300		
9,510	8,700	(810)	9.31-	Retirement System Contribution	9,510		8,700	(810)	9.31-
14,408	15,691	1,283	8.18	Misc Employees' Benefits	14,408		15,691	1,283	8.18
169,365	210,912	41,547	19.70	TOTAL OPERATING EXPENDITURES	153,564	15,801	210,912	41,547	19.70
65,746	19,890	(45,856)		NET REVENUES (EXPENDITURES)	81,547	(15,801)	19,890	(45,856)	

Total Operating Expenditures - $169.4
As of June 30, 2017
(millions of dollars)




Operating Expenditures by Category (Budget vs. Actual)
as of June 30, 2017 (millions of dollars)
Millions ($000's)
65
60
55
50
45
40
35
30
25
20
15
10
5
0
Personnel Services
Material, Supplies & Services
Equipment
Debt Service
Fixed charges
Budget
Actual


BUDGETED OPERATING EXPENDITURES FY 2017
Cumulative Millions($000's)
Monthly Millions ($000's)
240
220
200
180
160
140
120
100
80
60
40
20
0
25
20
15
10
5
0
19.7%
7/2016
8/2016
9/2016
10/2016
11/2016
12/2016
1/2017
2/2017
3/2017
4/2017
5/2017
6/2017
Expenditures-by month
Budgeted Expenditures-by month
Expenditures-cumulative
Budgeted expenditures-cumulative


BUDGETED OPERATING REVENUES FY 2017
Cumulative Millions ($000's)
Monthly Millions ($000's)
250
225
200
175
150
125
100
75
50
25
0
25
20
15
10
5
0
1.9%
7/2016
8/2016
9/2016
10/2016
11/2016
12/2016
1/2017
2/2017
3/2017
4/2017
5/2017
6/2017
Revenue-by month
Budgeted Revenues-by month
Revenue - cumulative
Budgeted revenues-cumulative

WATER FOR LIFE

Safe, dependable, and affordable water now and into the future

Board of Water Supply
City and County of Honolulu

Financial Performance

July 2016 – June 2017

Budget to Actual
July 2016 – June 2017

- Actual Revenue $235.1 million vs. Budgeted Revenue $230.8 million
- Operating costs are $169.4 million vs. Budgeted costs of $210.9 million
- Actual Net Revenue $65.7 million vs. Budgeted Net Revenue $19.9 million

Cost Drivers

Year to Date June 2017

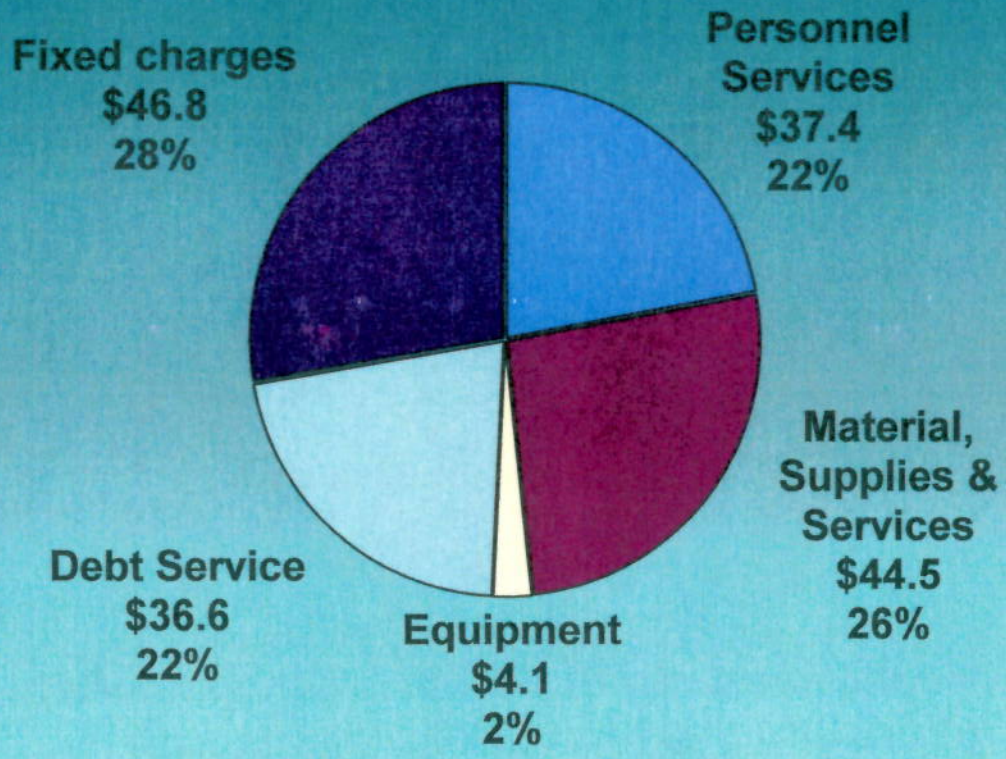
	Actual (millions)	Budget (millions)
• Personnel	$37.4	$47.7
• Services/Supplies	$31.8	$45.6
• Repairs & Misc.	$12.3	$15.1
• Equipment	$ 4.1	$ 4.8
• Utilities	$ 19.5	$30.2

WATER FOR LIFE

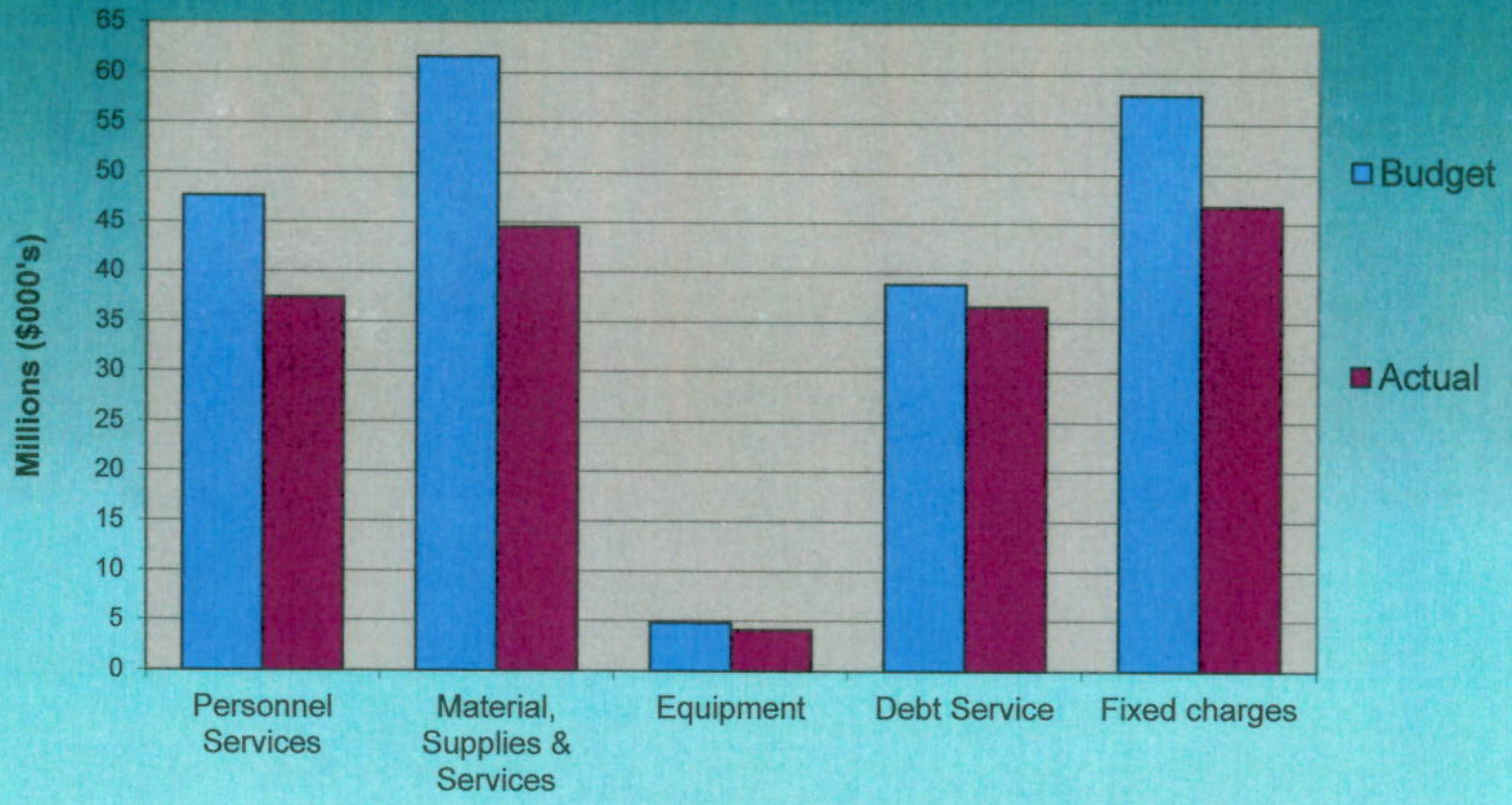
Safe, dependable, and affordable water now and into the future

Board of Water Supply
City and County of Honolulu

Total Operating Expenditures - $169.4
As of June 30, 2017
(millions of dollars)



Operating Expenditures by Category (Budget vs. Actual) as of June 30, 2017 (millions of dollars)

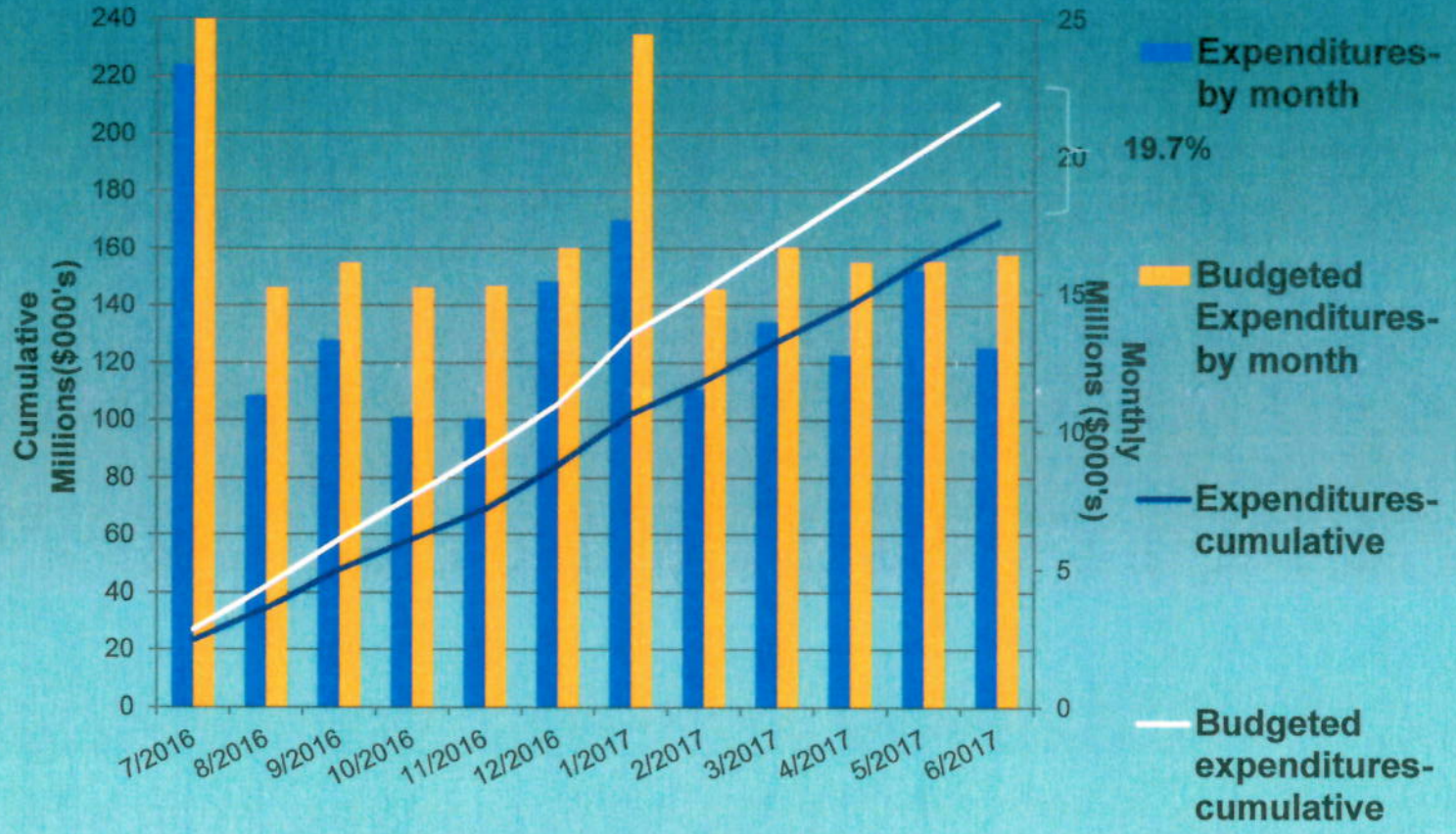


WATER FOR LIFE

Safe, dependable, and affordable water now and into the future

Board of Water Supply
City and County of Honolulu

BUDGETED OPERATING EXPENDITURES
FY 2017

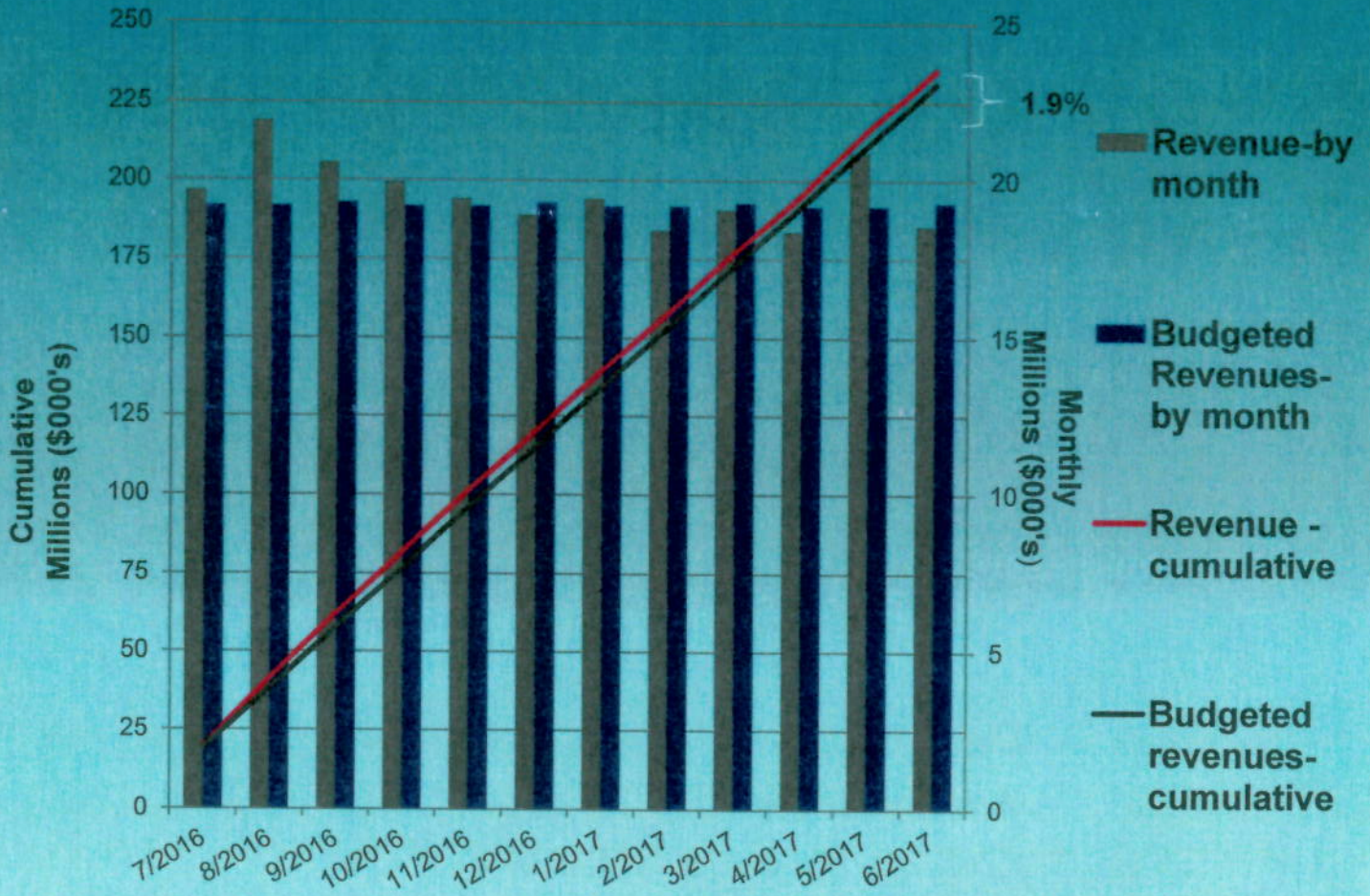


WATER FOR LIFE

Safe, dependable, and affordable water now and into the future

Board of Water Supply
City and County of Honolulu

BUDGETED OPERATING REVENUES FY 2017



Questions
or
Comments

ITEM FOR INFORMATION NO. 3

"August 28, 2017

WATER SYSTEM REVENUE BONDS COMPLIANCE WITH RATE COVENANT

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Water System Revenue Bonds - Compliance with Rate Covenant

In accordance with Article VIII, Section 8.02, Rates and Charges, of the Water System Revenue Bonds, Resolution No. 717, 2001, we have completed a review of the financial condition of the Board of Water Supply for the purpose of estimating whether the Net Revenues for the current fiscal year and the next succeeding fiscal year will be sufficient to comply with the rate covenant in Section 8.02.

Our review included an examination of the financial and accounting records which we considered necessary to express an opinion on the adequacy of the department's rates and other charges such that Net Revenues shall not be less than the Net Revenue Requirement in each fiscal year.

In our opinion, Net Revenues for fiscal years 2017 and 2018 will not be less than the Net Revenue Requirement for such fiscal years.

The attached schedules present the actual and estimated revenues and expenditures in compliance with the above rate covenant.

Respectfully submitted,

/s/ for ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

DISCUSSION: Joe Cooper, Waterworks Controller, gave the report. There were no comments or discussion.

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
CALCULATIONS OF NET REVENUES AND NET REVENUE REQIREMENT
FISCAL YEAR ENDING JUNE 30, 2018

	PROJECTED FY 2018
REVENUES	
Water sales	$ 230,809,500
Other charges & services	3,340,000
Interest revenue	2,400,000
Total revenues	$ 236,549,500
DEDUCTIONS	
Operating expenses	$ 149,420,000
Net revenues	$ 87,129,500
NET REVENUE REQUIREMENT	
Greater of:	
1) Aggregate debt service for FY 18	$ 17,845,000
Required deposits - subordinate obligation fund	
	$ 17,845,000
2) Aggregate debt service for FY 18	$ 17,845,000
	x 1.20
	$ 21,414,000
	$ 21,414,000
Target Net Requirement of 1.7	$ 30,336,500
Current Ratio	4.88

BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
CALCULATIONS OF NET REVENUES AND NET REVENUE REQIREMENT
FISCAL YEAR ENDING JUNE 30, 2017

	FY 2017
REVENUES	
Water sales	$ 229,310,605
Other charges & services	2,715,067
Interest revenue	4,190,733
Total revenues	$ 236,216,405
DEDUCTIONS	
Operating expenses	$ 127,089,353
Net revenues	$ 109,127,052
NET REVENUE REQUIREMENT	
Greater of:	
1) Aggregate debt service for FY 17	$ 17,787,070
Required deposits - subordinate obligation fund	
	$ 17,787,070
2) Aggregate debt service for FY 17	$ 17,787,070
	x 1.20
	$ 21,344,484
	$ 21,344,484
Target Net Requirement of 1.7	$ 30,238,019
Current Ratio	6.14

ITEM FOR INFORMATION NO. 4

Quarterly Capital Improvement Program Status Report
All Divisions

Quarter Awarded	JUL - SEP		OCT - DEC		JAN - MAR		APR - JUN		Awarded to Date	Total Budgeted
Design Contracts Awarded (#/$)	0	$0.00	1	$427,504.00	6	$2,098,483.97	25	$11,662,622.45	$14,188,610.42	$13,005,000.00
Construction Contracts Awarded (#/$)	5	$1,474,398.82	7	$11,423,670.36	7	$19,859,282.61	11	$19,554,941.99	$52,312,293.78	$38,140,000.00
Project Totals	5	$1,474,398.82	8	$11,851,174.36	13	$21,957,766.58	36	$31,217,564.44	$66,500,904.20	$51,145,000.00

Quarter Completed	JUL - SEP		OCT - DEC		JAN - MAR		APR - JUN		Totals
Design Contracts Completed (#/$)	2	$1,133,706.68	2	$187,644.00	2	$683,309.00	4	$2,088,171.00	$4,092,830.68
Construction Contracts Completed (#/$)	0	$0.00	1	$830,900.00	2	$3,568,665.00	0	$0.00	$4,399,565.00
Totals	2	$1,133,706.68	3	$1,018,544.00	4	$4,251,974.00	4	$2,088,171.00	$8,492,395.68

Ongoing Projects	
Ongoing Design Projects (#)	202
Ongoing Design Projects ($)	$68,474,673.32
Ongoing Construction Projects (#)	122
Ongoing Construction Projects ($)	$259,938,799.91

Quarterly Capital Improvement Program Status Report
All Divisions

DESIGN AND CONSTRUCTION PROJECTS AWARDED - FOURTH QUARTER FY 2017

Item #	Project Title	Expend Type	Budget Amount	Awarded
004	Waikele Gulch Exploratory Well	P & E	$250,000.00	$376,646.00
005	Manoa Learning Center	P & E	250,000.00	249,900.00
006	Mililani Wells Replacement of Pumping Units	CONST	2,500,000.00	8,797,413.62
007D	Honouliuli Wells I: Repair of Unit #2	CONST	1,563,306.24	1,649,450.00
008	Waialae Iki Booster No. 1 Relocation	P & E	650,000.00	927,899.60
010	Waihee Tunnel and Inclined Wells	P & E	370,000.00	420,000.00
011	Waipahu Wells I Renovation	P & E	650,000.00	572,154.00
012A	Pump Station Instrumentation & Controls Upgrade	P & E	0.00	784,488.00
013	Kapaa 272 Reservoir Replacement	P & E	500,000.00	462,437.88
016	Wilhelmina Rise Water System Improvements Part V	CONST	3,325,000.00	3,306,534.00
017	Niumalu Loop and Kukii Street 8-inch Main	CONST	2,000,000.00	1,416,000.00
022	Diamond Head Water System Improvements,Part III and 7th Avenue Main Relocation	P & E	130,000.00	247,560.55
023	Barbers Point 215 Water System Improvements	P & E	150,000.00	375,916.00
025	Kailua Road 8-inch Main	P & E	90,000.00	190,725.61
027	Monsarrat Avenue Water System Improvements	P & E	300,000.00	390,416.00
028	Lanikai Water System Improvements, Part II	P & E	250,000.00	702,747.88
029	Wahiawa Water System Improvements, Part IV	P & E	1,000,000.00	1,426,075.36
030	Akanoho Place 8-inch Main	P & E	240,000.00	258,608.81
032	Waihee Road Water System Improvements	P & E	75,000.00	140,931.03
33A	School Street Box Drain Emergency Repair	P & E	370,800.00	96,564.09
036	Kalaeloa Seawater Desalination Facility	P & E	150,000.00	150,000.00
038M	Beretania Engineering Building - Replacement Of Existing Storage	CONST	10,057.00	10,994.76
038N	Replacement of Fire Suppression System IT Server Area	CONST	500,000.00	80,138.71
038D	Beretania Public Service Building Interior Repainting	CONST	562,787.33	435,000.00
043	Nalu Enhancement	P & E	1,640,000.00	1,310,052.00
046D	Archaeological Monitoring for Punaluu Wells II, Part B - Station Renovation	P & E	79,957.54	79,957.54
046E	Microsoft Access Database Design	P & E	116,127.87	110,831.40
047	Waialua 225 Reservoir Facility Drainage Improvements	P & E	400,000.00	528,544.00
048	Kalama Valley Pressure Reducing Valve Improvements	P & E	370,000.00	390,872.28
048A	Slope Stabilization Near 2250 Kalena Drive	CONST	200,000.00	252,600.00
050	Waialae Iki Well Renovation	CONST.	925,000.00	1,228,920.00
052	Mililani Wells II Improvements prv Assembly Installation	CONST	350,000.00	520,080.00
055	Pearl City Wells I Renovation	CONST	2,500,000.00	1,857,810.90
061	Aina Haina 170 0.5 MG Reservoir No.2	P & E	500,000.00	468,633.42
063	Kuwale 242 4.0 MG Reservoir No. 2 Environmental Impact Statement	P & E	325,000.00	365,300.00
064	Kualakai Parkway 16- Inch Recycled Water Main	P & E	860,000.00	635,361.00
	4th Quarter totals		**$24,153,035.98**	**$31,217,564.44**

DESIGN AND CONSTRUCTION PROJECTS COMPLETED - FOURTH QUARTER FY 2017

Job #	Project Title	Completion Date	Contract Amount
2010-034	Rockfall Mitigation at Various Locations	4/18/2017	$279,449.00
2004-033AJ	Kapiolani Boulevard 12-Inch Main, McCullly Street to Date Street	5/10/2017	433,872.00
2005-040	Kawananakoa Place 8-Inch Mains	6/22/2017	99,850.00
2011-037	Wireless Communications System	5/31/2017	1,275,000.00
	4th Quarter totals		**$2,088,171.00**

DISCUSSION: Jason Takaki, Capital Projects Division Program Administrator, gave the report. He noted there was a significant difference between the encumbered amount and the budgeted amount and explained the difference was made up through the contract adjustment account and the construction cost index account, where monies were specifically budgeted for overages in construction bids. Mr. Takaki stated that some projects were deferred to the current fiscal year to make funds available, and Robert Morita would be explaining this in the next report.

Mr. Hulihee asked what happened to the Mililani Wells Project. Mr. Takaki explained that the budgeted amount ended up being too low, but the award amount was very close to the final engineer's estimate. He explained it was suspected to be an underground shift that affected BWS wells in Mililani, so more exploratory work is done once the pumps are pulled. Mr. Hulihee then asked if that's what threw the whole budget off. Mr. Takaki replied that that was a big part of it. He stated that the scope was incomplete at the time of budget, and that better scoping prior to budget formulation is something BWS is addressing.

ITEM FOR INFORMATION NO. 5

"August 28, 2017

REVISIONS TO
THE FY 2016-2017
CIP BUDGET

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Revisions to the Fiscal Year 2016 – 2017 Capital Improvement Program Budget, August 2017

This is to inform the Board that the funds budgeted for the Manoa Estates Water System Improvements (FY 2017 CIP Item No. 15); Punaluu Wells Renovation (FY 2017 CIP Item No. 56); Red Hill Groundwater Monitoring Wells, Phase II (FY 2017 CIP Item No. 1); Apio Lane 8-inch Main (FY 2017 CIP Item No. 24); GAC Facility Improvements (FY 2017 CIP Item No. 34); Kronos Enhancements (FY 2017 CIP Item No. 41) and Makiki 180 Reservoir – Replace Altitude Valve Assembly (FY 2017 CIP Item No. 58) be used to provide additional funding to the CIP Contract Adjustment Account.

The deferral of these projects enabled the department to award several projects in the FY 2017 CIP budget without causing any significant delays to the overall CIP construction schedule.

The Contract Adjustment Account is used to provide additional funding when the appropriations for specific projects are less than what is needed to award the project.

FY 2017 Capital Improvement Program	Operating Fund	Reserve Release Fund
Current Appropriation	$74,396,800	$4,033,700
Item No. 15 MANOA ESTATES WATER SYSTEM IMPROVEMENTS This project was reprogrammed in the FY 2018 CIP budget. Additional time was needed to prepare the bid documents. Project No. 18-24	(3,080,000)	
Item No. 56 PUNALUU WELLS II RENOVATION This project was reprogrammed in the FY 2018 CIP budget. This deferral allowed for several FY 2017 CIP projects to be awarded without significantly delaying this project. Project No. 18-12	(7,500,000)	

FY 2017 Capital Improvement Program	Operating Fund	Reserve Release Fund
Item No. 1 RED HILL GROUNDWATER MONITORING WELLS, PHASE II The scope of this project is being finalized and this project will be reprogrammed in the FY 2018 CIP budget.	(2,000,000)	
Item No. 24 APIO LANE 8-INCH MAIN This project is deferred to a future fiscal year because additional project collaboration is needed to finalize the scope of work for this project.	(75,000)	
Item No. 34 GAC FACILITY IMPROVEMENTS This project is budgeted in the FY 2018 CIP budget. This deferral does not add a significant delay to this project. Project No. 18-43	(500,000)	
Item No. 41 KRONOS ENHANCEMENTS This project was funded from the FY 2017 Operating budget. The CIP funds are not needed for this project.	(250,000)	
Item No. 58 MAKIKI 180 RESERVOIR – REPLACE ALTITUDE VALVE ASSEMBLY The solicitation for this project was canceled and is deferred to a future fiscal year. Additional design and construction work is required for this project.		(435,000)
CONTRACT ADJUSTMENT ACCOUNT	13,405,000	435,000
AMENDED APPROPRIATION	$74,396,800	$4,033,700

Sufficient funds are available within each fund to effect these changes and the total consolidated appropriation of the FY 2017 CIP budget remains the same.

Respectfully submitted,

/s/ ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer"

The foregoing was for information only.

DISCUSSION: Robert Morita, Executive Support Office Executive Assistant, gave the report. There were no comments or discussion.

ITEM FOR INFORMATION NO. 6

"August 28, 2017

GROUNDWATER LEVELS

Chair and Members
Board of Water Supply
City and County of Honolulu
Honolulu, Hawaii 96843

Chair and Members:

Subject: Status Update of Groundwater Levels at All Index Stations

There was one aquifer index well within low groundwater status for the production month of July 2017. Punaluu has been in caution status since the week of June 18, 2017. The monthly production average for July 2017 was 152.29 million gallons per day.

The Board of Water Supply rainfall index for the month of July 2017 was 70 percent of normal; with a 5-month moving average of 85 percent. As of August 8, 2017, the Hawaii Drought Monitor shows abnormally dry conditions for most of southern Oahu.

The National Weather Service (NWS) forecast models through January, 2018 is predicting equal chances for above, near, or below normal precipitation.

Most monitoring wells are exhibiting decreasing trends due to the increased pumpage during the summer season.

Respectfully submitted,

/s/ ERNEST Y. W. LAU, P.E
Manager and Chief Engineer

Attachment"

The foregoing was for information only.

DISCUSSION: Marc Chun, Water Resources Division Assistant Program Administrator, gave the report. There were no comments or discussion.

PRODUCTION, HEAD AND RAINFALL REPORT
MONTH OF JULY 2017

POTABLE

STATION	MGD
HONOLULU (1)	
KULIOUOU	0.07
WAILUPE	0.05
AINA KOA	0.20
AINA KOA II	0.91
MANOA II	0.00
PALOLO	1.14
KAIMUKI HIGH	2.61
KAIMUKI LOW	1.62
WILDER	7.96
BERETANIA HIGH	5.36
BERETANIA LOW	5.30
KALIHI HIGH	1.63
KALIHI LOW	1.93
KAPALAMA	0.52
KALIHI SHAFT	8.39
MOANALUA	1.32
HALAWA SHAFT	9.95
KAAMILO	0.00
KALAUAO	6.03
PUNANANI	12.06
KAAHUMANU	0.02
HECO WAIAU	2.75
MANANA	0.42
WELLS SUBTOTAL:	70.25
MANOA TUNNEL	0.17
PALOLO TUNNEL	0.23
GRAVITY SUBTOTAL:	0.40
HONO. SUBTOTAL:	70.65

STATION	MGD
WINDWARD (2)	
WAIMANALO II	0.45
WAIMANALO III	0.40
KUOU I	1.70
KUOU II	0.45
KUOU III	0.70
LULUKU	0.96
HAIKU	0.00
IOLEKAA	0.00
KAHALUU	0.84
KAHANA	0.84
PUNALUU I	0.00
PUNALUU II	4.01
PUNALUU III	1.14
KALUANUI	0.00
MAAKUA	0.44
HAUULA	0.00
WELLS SUBTOTAL:	11.93
WAIM. TUNNELS I & II	0.00
WAIM. TUNNELS III&IV	0.19
WAIHEE INCL. WELLS	0.55
WAIHEE TUNNEL	4.26
LULUKU TUNNEL	0.09
HAIKU TUNNEL	0.87
KAHALUU TUNNEL	1.77
GRAVITY SUBTOTAL:	7.72
WIND. SUBTOTAL:	19.65

STATION	MGD
NORTH SHORE (3)	
KAHUKU	0.29
OPANA	0.62
WAIALEE I	0.00
WAIALEE II	0.50
HALEIWA	0.00
WAIALUA	1.43
N.SHORE SUBTOTAL:	2.84

MILILANI (4)	
MILILANI I	3.26
MILILANI II	0.00
MILILANI III	0.00
MILILANI IV	2.22
MILILANI SUBTOTAL:	5.48

WAHIAWA (5)	
WAHIAWA	1.72
WAHIAWA II	1.72
WAHIAWA SUBTOTAL:	3.44

PEARL CITY-HALAWA (6)	
HALAWA 277	1.14
HALAWA 550	0.00
AIEA	1.18
AIEA GULCH 497	0.02
AIEA GULCH 550	0.23
KAONOHI I	1.17
WAIMALU I	0.00
NEWTOWN	1.04
WAIAU	0.87
PEARL CITY I	0.52
PEARL CITY II	1.14
PEARL CITY III	0.39
PEARL CITY SHAFT	0.93
PEARL CITY-HALAWA SUBTOTAL:	8.63

STATION	MGD
WAIPAHU-EWA (7)	
WAIPIO HTS.	0.42
WAIPIO HTS. I	0.23
WAIPIO HTS. II	0.46
WAIPIO HTS. III	1.28
WAIPAHU	5.99
WAIPAHU II	1.90
WAIPAHU III	1.87
WAIPAHU IV	3.24
KUNIA I	4.53
KUNIA II	2.01
KUNIA III	1.42
HOAEAE	6.12
HONOULIULI I	1.30
HONOULIULI II	5.90
MAKAKILO	0.29
WAIPAHU-EWA SUBTOTAL:	36.95

WAIANAE (8)	
MAKAHA I	0.00
MAKAHA II	0.39
MAKAHA III	1.05
MAKAHA V	0.65
MAKAHA VI	0.00
MAKAHA SHAFT	0.00
KAMAILE	0.12
WAIANAE I	0.23
WAIANAE II	0.11
WAIANAE III	0.53
WELLS SUBTOTAL:	3.08
WAIA. C&C TUNNEL	1.40
WAIA. PLANT. TUNNELS	0.16
GRAVITY SUBTOTAL:	1.56
WAIANAE SUBTOTAL:	4.64

NONPOTABLE

NONPOTABLE	MGD
KALAUAO SPRINGS	0.51
BARBERS POINT WELL	1.14
GLOVER TUNNEL NP	0.41
NONPOTABLE TOTAL:	2.06

RECYCLED WATER (JUNE 2017)

RECYCLED WATER	MGD
HONOULIULI WRF R-1	7.79
HONOULIULI WRF RO	1.49
RECYCLED WATER TOTAL:	9.28

PRODUCTION, HEAD AND RAINFALL REPORT
MONTH OF JULY 2017

PRODUCTION SUMMARIES

TOTAL WATER	MGD
PUMPAGE	142.61
GRAVITY	9.68
POTABLE TOTAL:	152.29
NONPOTABLE	2.06
RECYCLED WATER	9.28
TOTAL WATER:	163.63

CWRM PERMITTED USE AND BWS ASSESSED YIELDS FOR BWS POTABLE SOURCES

	WATER USE DISTRICTS	A PERMITTED USE/ BWS YLDS	B JUL 2017	C DIFF. A-B
1	HONOLULU	82.93	70.25	12.68
2	WINDWARD	25.02	14.84	10.18
3	NORTH SHORE	4.74	2.84	1.90
4	MILILANI	7.53	5.48	2.05
5	WAHIAWA	4.27	3.44	0.83
6	PEARL CITY-HALAWA	12.25	8.63	3.62
7	WAIPAHU-EWA	50.63	36.95	13.68
8	WAIANAE	4.34	3.08	1.26
TOTAL:		191.71	145.52	46.19

CWRM PERMITTED USE FOR BWS NONPOTABLE SOURCES

	WATER USE DISTRICTS	A PERMITTED USE	B JUL 2017	C DIFF. A-B
7	WAIPAHU-EWA (BARBERS POINT WELL)	1.00	1.14	-0.14
TOTAL:		1.00	1.14	-0.14

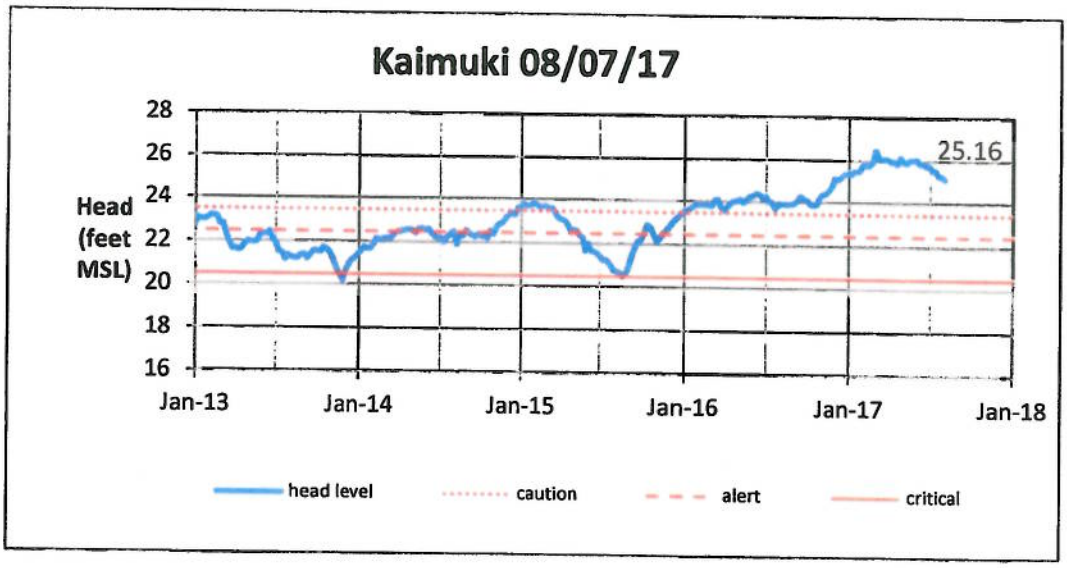
EFFECTIVE WATER DEMAND PER DISTRICT

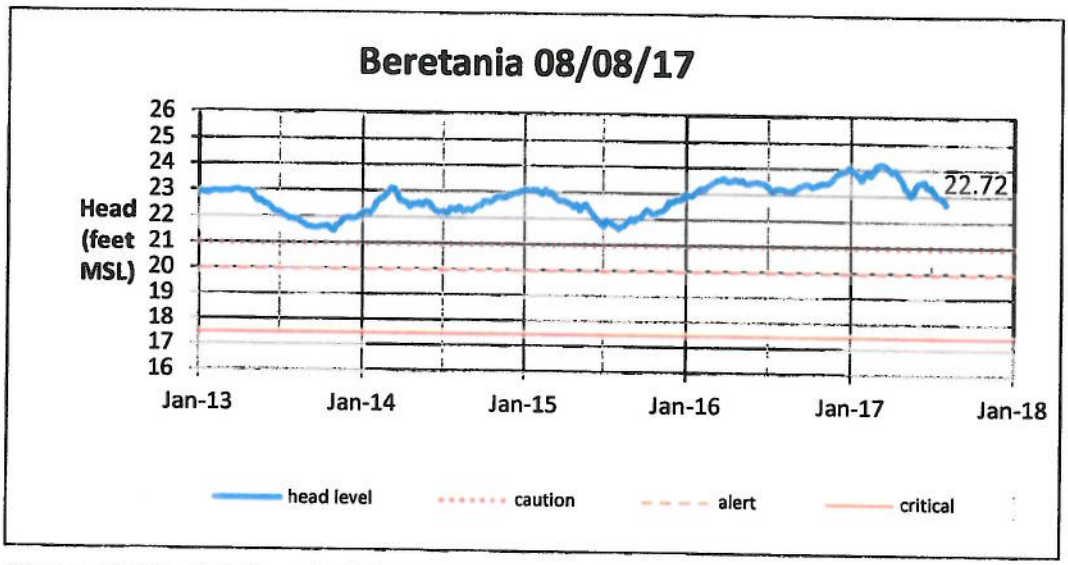
IMPORT/EXPORT BETWEEN WATER USE DISTRICTS

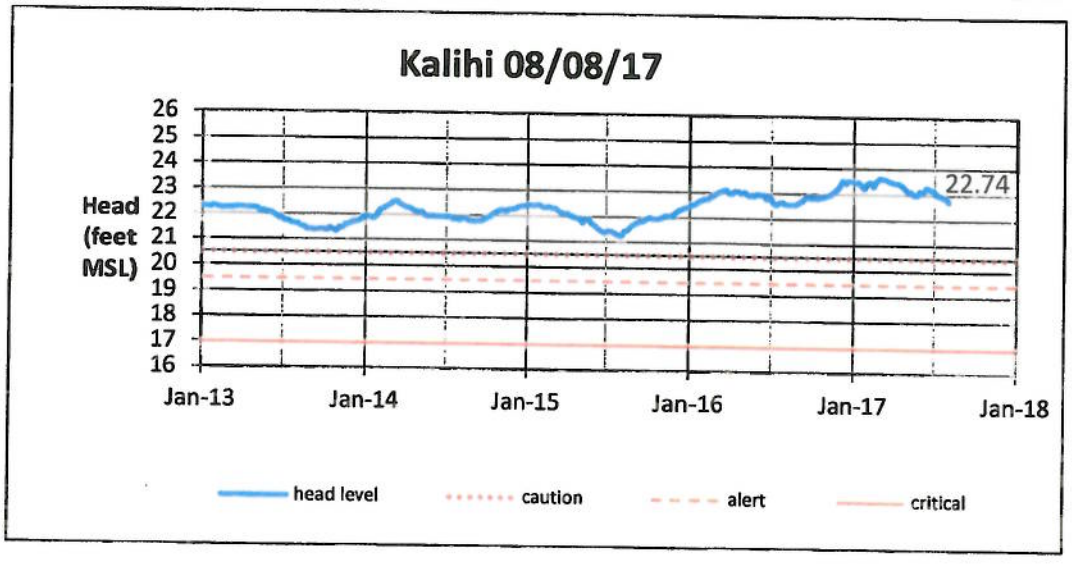
FROM	TO		MGD
2	1	WINDWARD EXPORT	0.14
7	8	BARBERS PT LB	6.01

	WATER USE DISTRICTS	SUBTOTAL	IMPORT	EXPORT	EFFECTIVE WATER DEMAND
1	HONOLULU	70.25	0.14	-	70.39
2	WINDWARD	14.84	-	0.14	14.70
3	NORTH SHORE	2.84	-	-	2.84
4	MILILANI	5.48	-	-	5.48
5	WAHIAWA	3.44	-	-	3.44
6	PEARL CITY-HALAWA	8.63	-	-	8.63
7	WAIPAHU-EWA	36.95	-	6.01	30.94
8	WAIANAE	3.08	6.01	-	9.09
TOTAL:		145.52	6.15	6.15	145.52

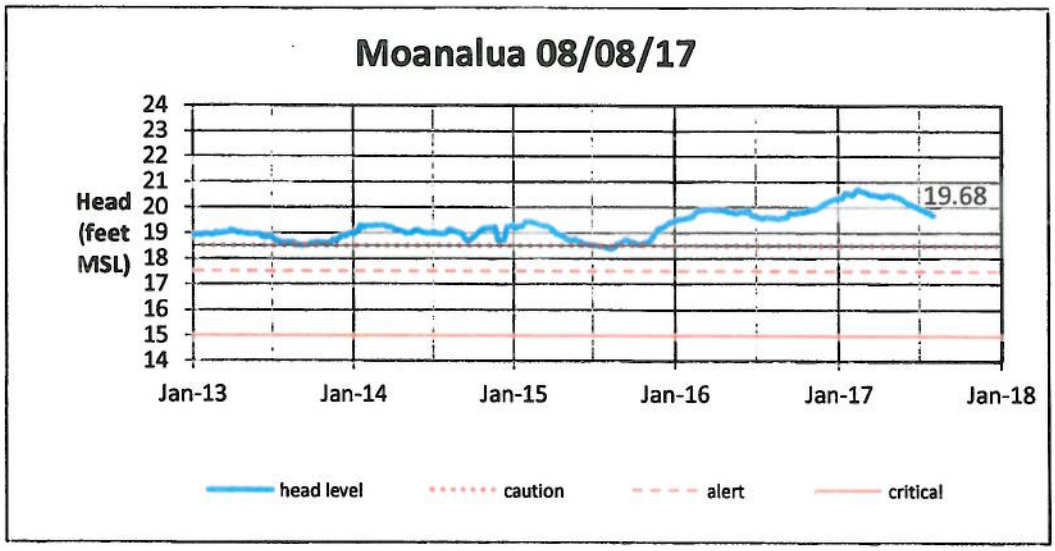
Weekly Head Report

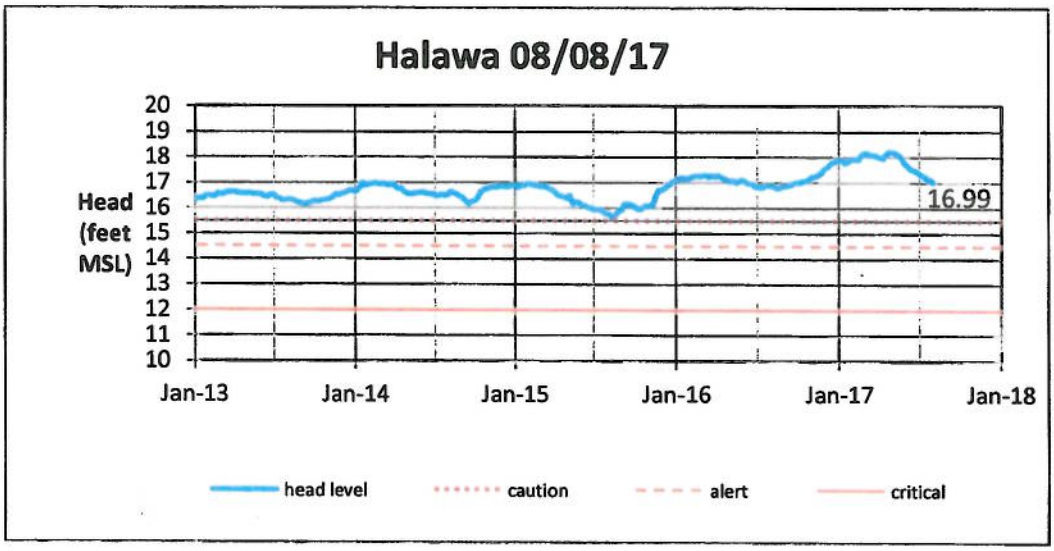


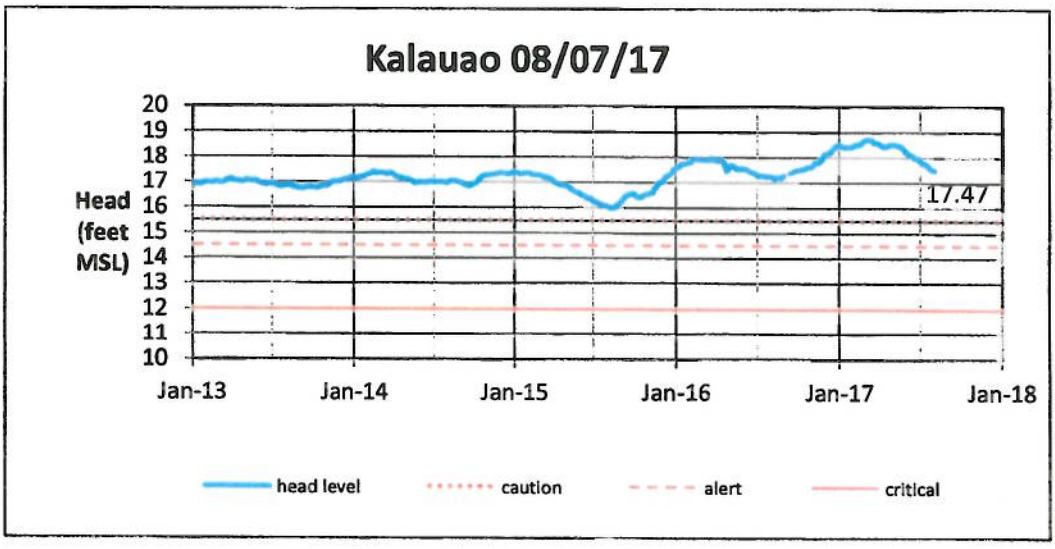




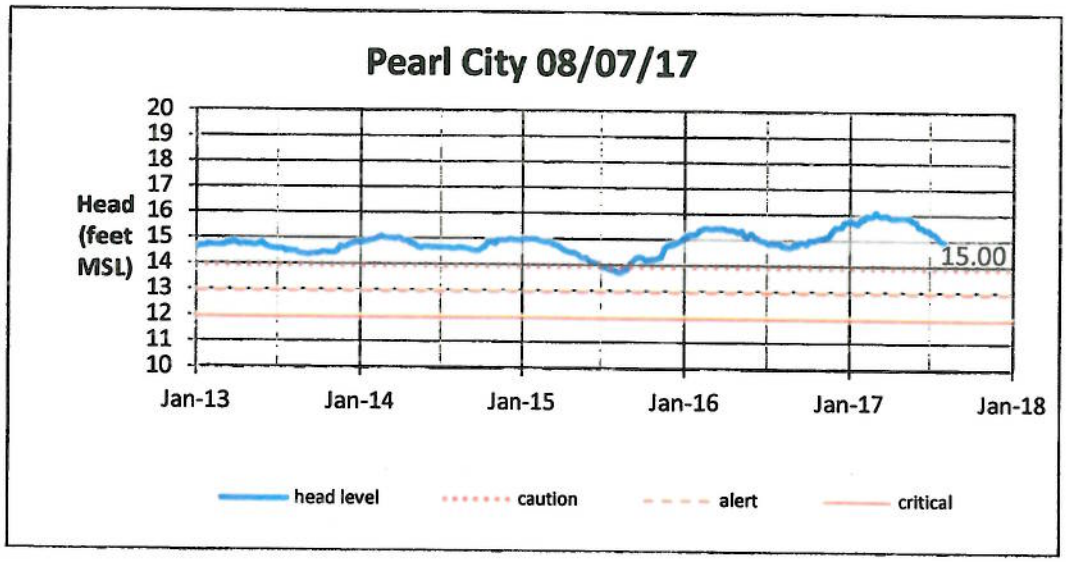
Weekly Head Report

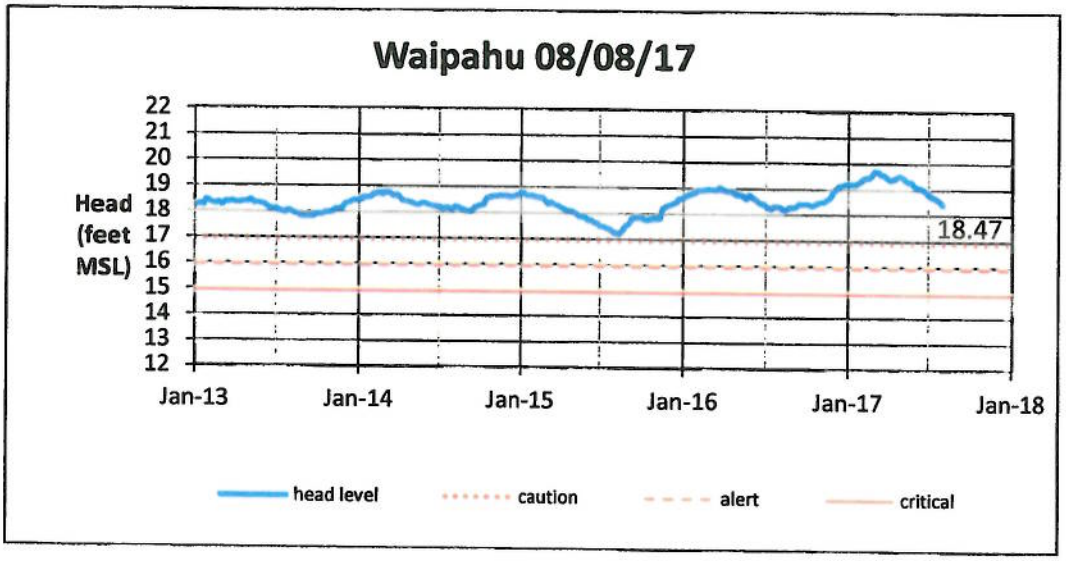


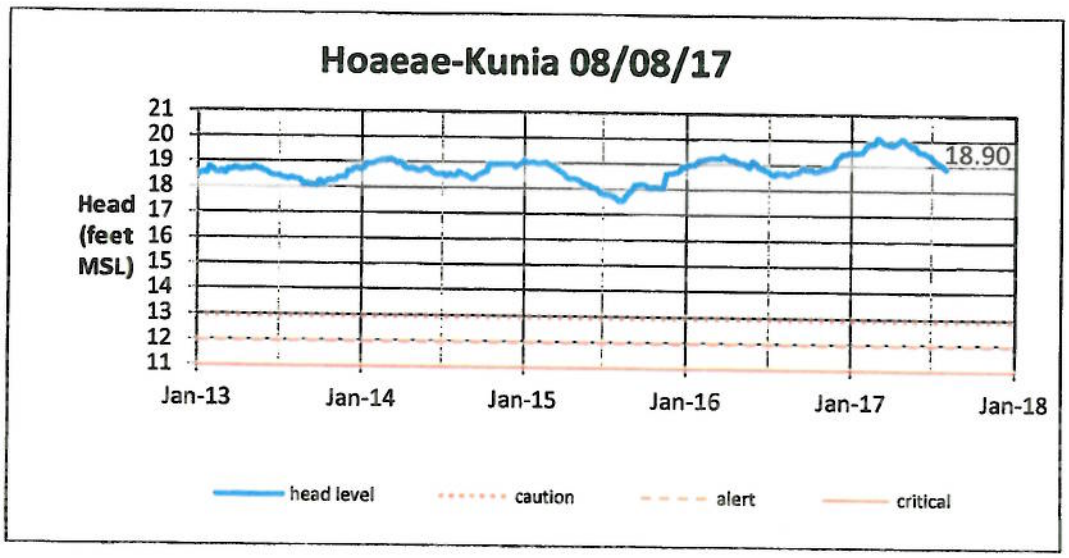




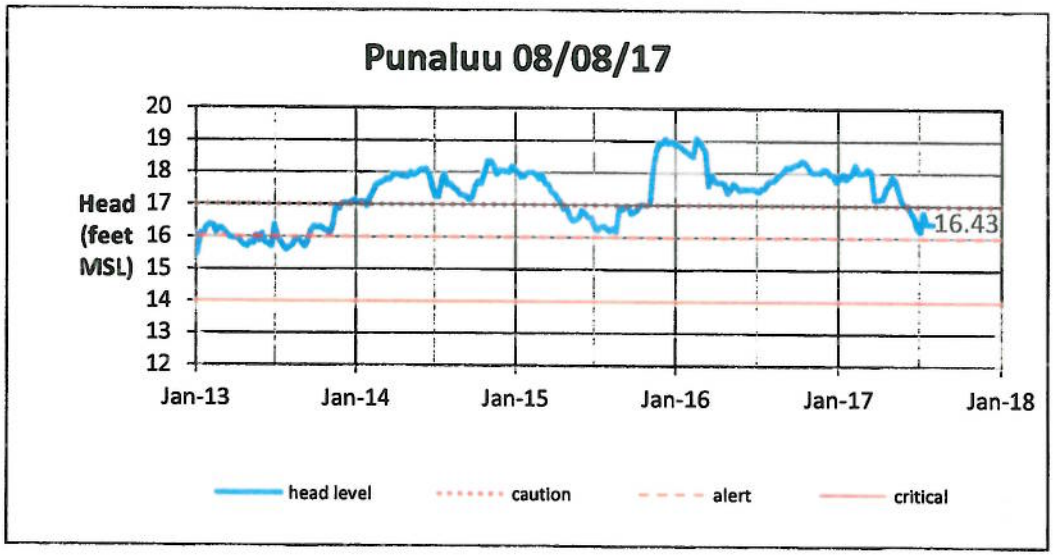
Weekly Head Report

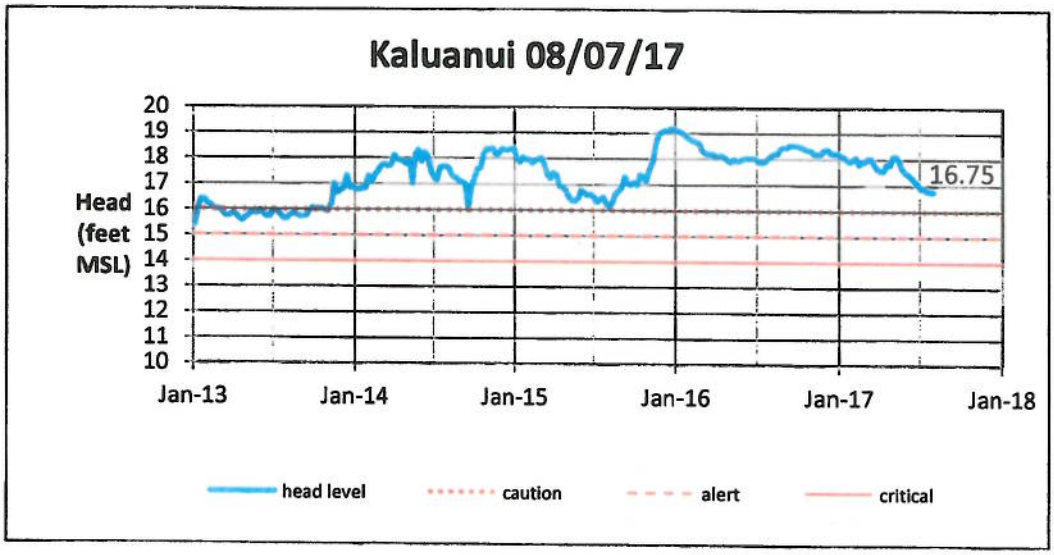


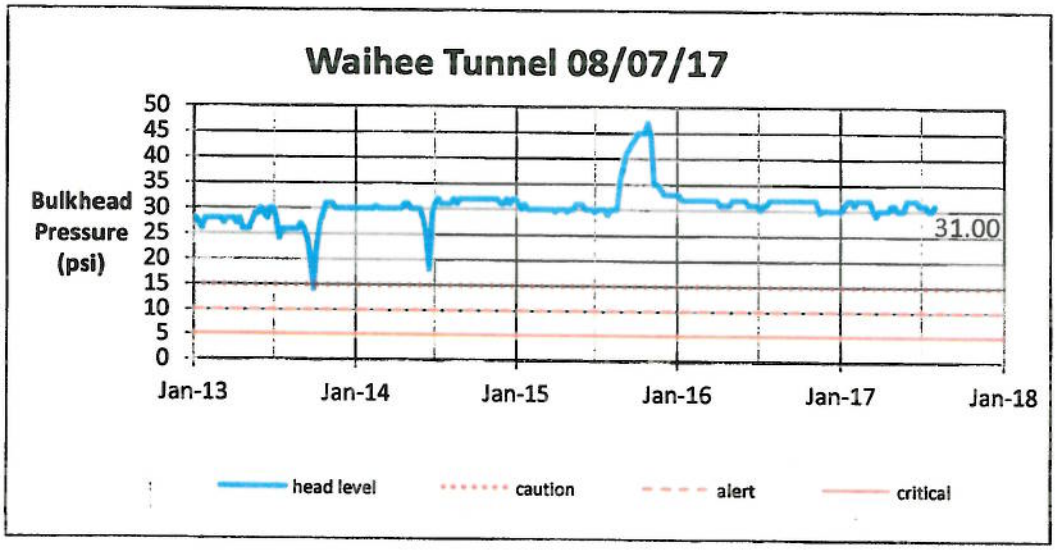




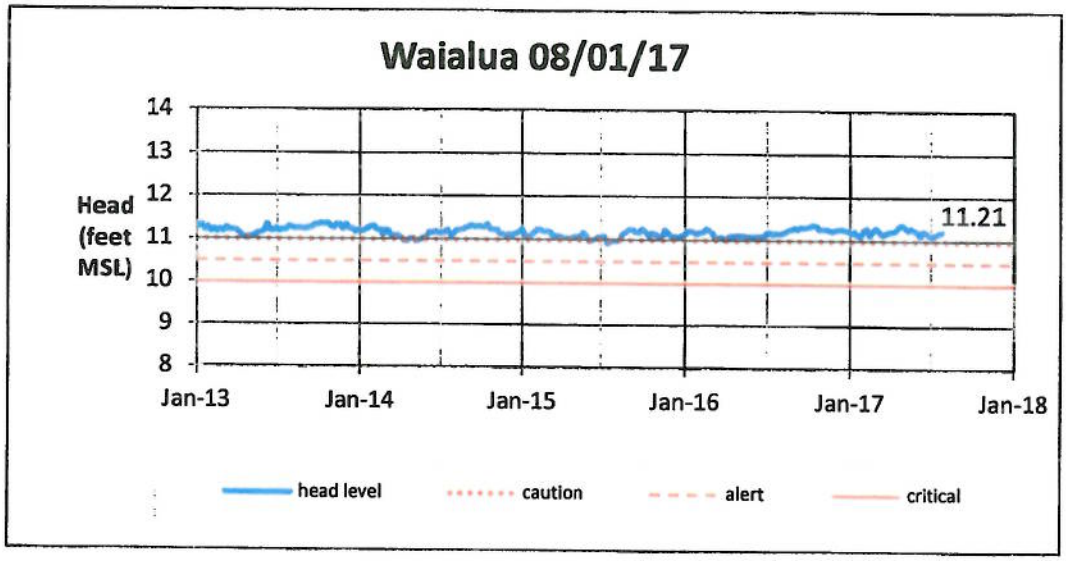
Weekly Head Report

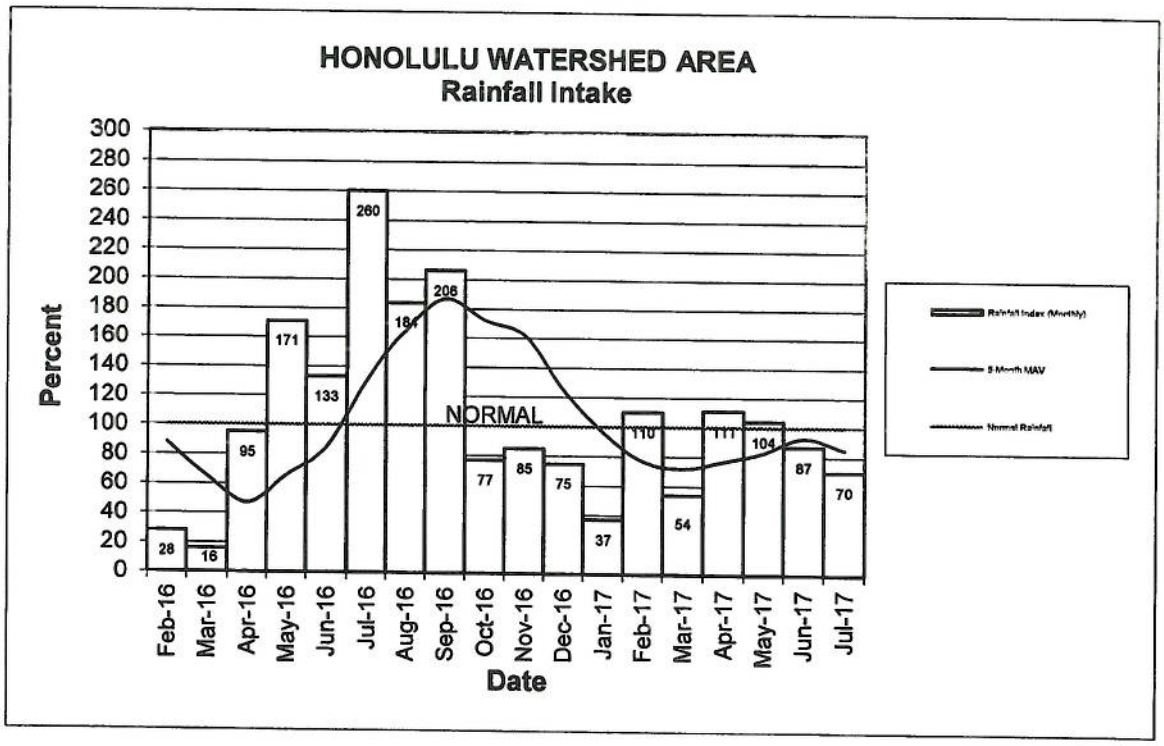


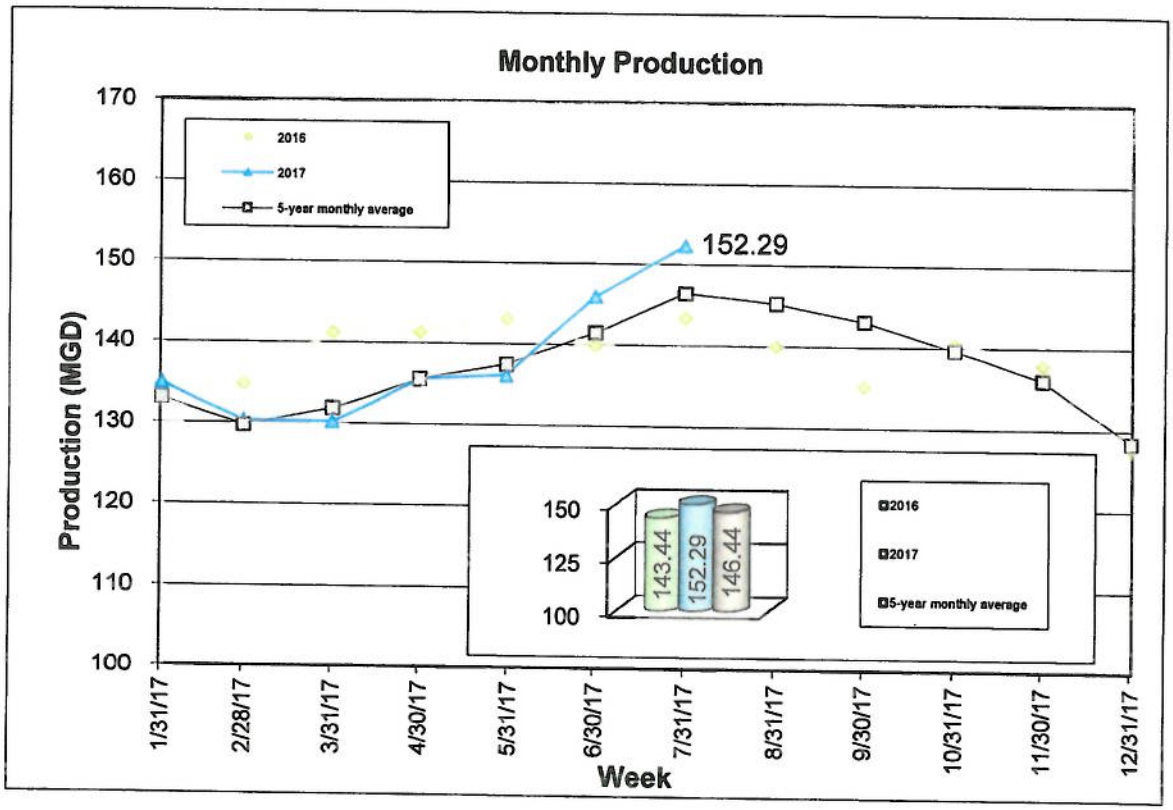




Weekly Head Report




HONOLULU WATERSHED AREA
Rainfall Intake
Percent
Date
NORMAL
28
16
95
171
133
260
184
206
77
85
75
37
110
54
111
104
87
70
Feb-16
Mar-16
Apr-16
May-16
Jun-16
Jul-16
Aug-16
Sep-16
Oct-16
Nov-16
Dec-16
Jan-17
Feb-17
Mar-17
Apr-17
May-17
Jun-17
Jul-17


Monthly Production
Production (MGD)
Week
2016
2017
5-year monthly average
152.29
143.44
152.29
146.44
1/31/17
2/28/17
3/31/17
4/30/17
5/31/17
6/30/17
7/31/17
8/31/17
9/30/17
10/31/17
11/30/17
12/31/17

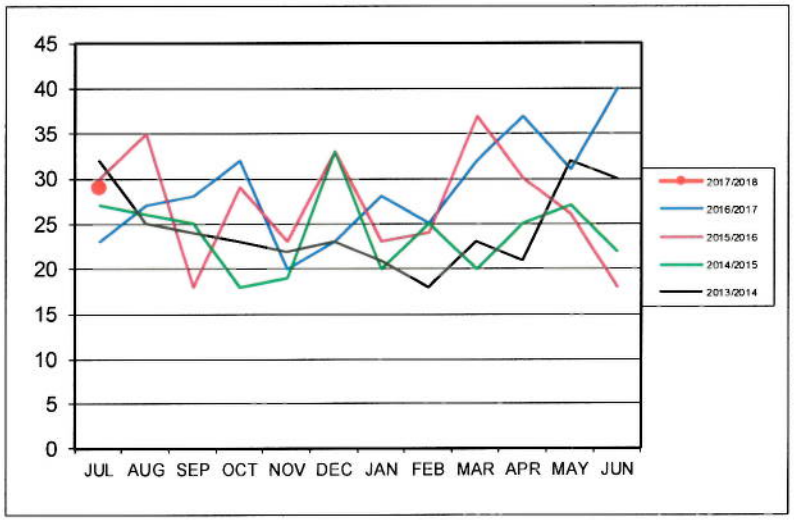
ITEM FOR INFORMATION NO. 7

WATER MAIN REPAIR REPORT

for July 2017

	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
2017/2018	29												29
2016/2017	23	27	28	32	20	23	28	25	32	37	31	40	346
2015/2016	30	35	18	29	23	33	23	24	37	30	26	18	326
2014/2015	27	26	25	18	19	33	20	25	20	25	27	22	287
2013/2014	32	25	24	23	22	23	21	18	23	21	32	30	294

Date	Address	Size (In)	Pipe Type
7/5/2017	734 10TH AVE, HONOLULU	6	CI
7/6/2017	2129 HILLCREST ST, HONOLULU	6	CI
7/9/2017	1242 PIHANA ST, HONOLULU	8	CI
7/10/2017	2122 KANEALII AVE, HONOLULU	8	CI
7/11/2017	2952 KAHALOA DR, HONOLULU	8	CI
7/11/2017	747 QUEEN ST, HONOLULU	12	DI
7/14/2017	85-239 MCARTHUR ST, WAIANAE	8	PVC
7/14/2017	726 WYLLIE ST , HONOLULU	6	CI
7/15/2017	41-803 WAIKUPANAHA ST	6	CI
7/16/2017	95-124 WAIKALANI DR, MILILANI	8	CI
7/18/2017	95-182 WAIKALANI DR, MILILANI	8	DI
7/18/2017	1712 OHEKE PL, HONOLULU	4	CI
7/18/2017	98-115 KAM HWY, AIEA	12	CI
7/19/2017	45-673 WAIAWI ST, KANEOHE	4	CI
7/19/2017	2343 KUAHEA ST, HONOLULU	6	DI
7/22/2017	45-519 KEAAHALA RD, KANEOHE	6	CI
7/22/2017	98-311 PONO ST,	8	CI
7/22/2017	94-345 PEKE LN, WAIPAHU	4	CI
7/23/2017	45-519 KEAAHALA RD, KANEOHE	6	CI
7/23/2017	2319 KUAHEA ST, HONOLULU	8	CI
7/25/2017	5615 KAWAIKUI ST, HONOLULU	6	CI
7/25/2017	94-1073 HOHOLA ST, WAIPAHU	8	DI
7/25/2017	2147 PUOWAINA DR, HONOLULU	4	CI
7/27/2017	45-781 NANILANI WAY, KANEOHE	4	DI
7/28/2017	45-706 PUA ALOWALO ST, KANEOHE	6	CI
7/28/2017	99-1266 D AIEA HTS DR, AIEA	8	CI
7/29/2017	45-557 KELUKA PL, KANEOHE	4	CI
7/30/2017	95-690 LEWANUU ST, MILILANI	8	AC
7/31/2017	91-912 WAIAPO PL, EWA BEACH	8	DI



16 miles of pipelines were surveyed by the Leak Detection Team in the month of July.

DISCUSSION: Mike Fuke, Field Operations Division Acting Program Administrator, gave the report. Mr. Fuke reported that there were 29 main breaks in the month of July 2017. He also added that there were 346 main breaks last fiscal year, noting that there were 40 main breaks in June alone. Of those main breaks in June, Mr. Fuke reported that within a 72 hour period, there were seven breaks in the Lanakila/Alaneo area. Mr. Fuke explained that they were not able to determine why there were so many breaks in the area within a short period, other than the fact that the pipes are old.

MOTION TO RECESS INTO EXECUTIVE SESSION	Upon unanimously approved motion, the Board recessed into Executive Session Pursuant to [HRS §92-5(a)(2)] at 3:55 PM to Consider Issues Pertaining to Matters Posted for Discussion at an Executive Session
OPEN SESSION	The Board reconvened in Open Session at 4:04 PM
MOTION TO ADJOURN	There being no further business Chair Andaya at 4:04 PM called for a motion to adjourn the Open Session. Ross Sasamura so moved; seconded by Kapua Sproat and unanimously carried.

Respectfully submitted,

Lisa K. Kim

LISA K. KIM

APPROVED:

BRYAN P. ANDAYA
Chair of the Board

SEP 2 5 2017

Date

THE MINUTES OF THE REGULAR SESSION BOARD MEETING ON AUGUST 28, 2017 WERE APPROVED AT THE SEPTEMBER 25, 2017 BOARD MEETING			
	AYE	NO	COMMENT
BRYAN P. ANDAYA	X		
KAPUA SPROAT	X		
DAVID C. HULIHEE	X		
KAY C. MATSUI			ABSENT
ROSS S. SASAMURA	X		
FORD N. FUCHIGAMI	X		