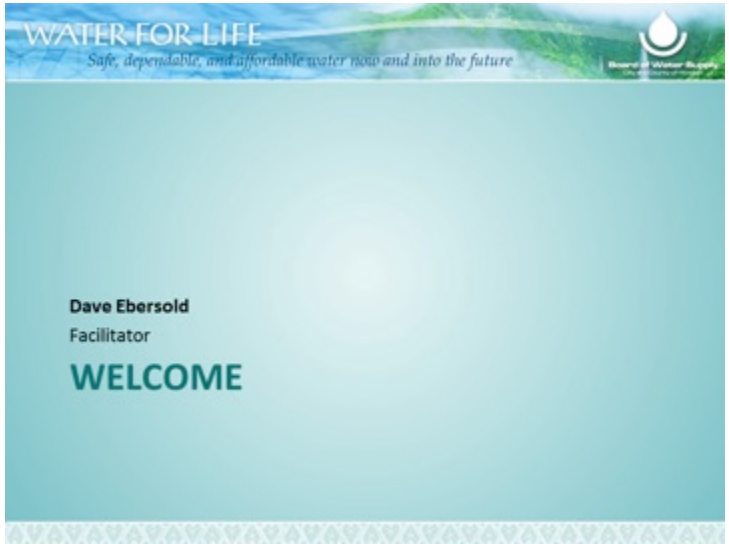
Slide 1


WATER FOR LIFE
Safe, dependable, and affordable water now and into the future
Stakeholder Advisory Group
Board of Water Supply
City & County of Honolulu
Wednesday, April 19, 2017

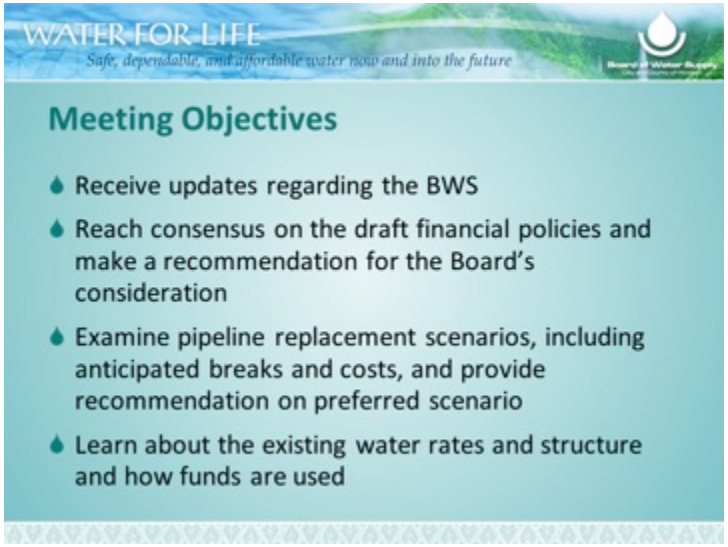
Slide 2


WATER FOR LIFE
Safe, dependable, and affordable water now and into the future
Dave Ebersold
Facilitator
WELCOME

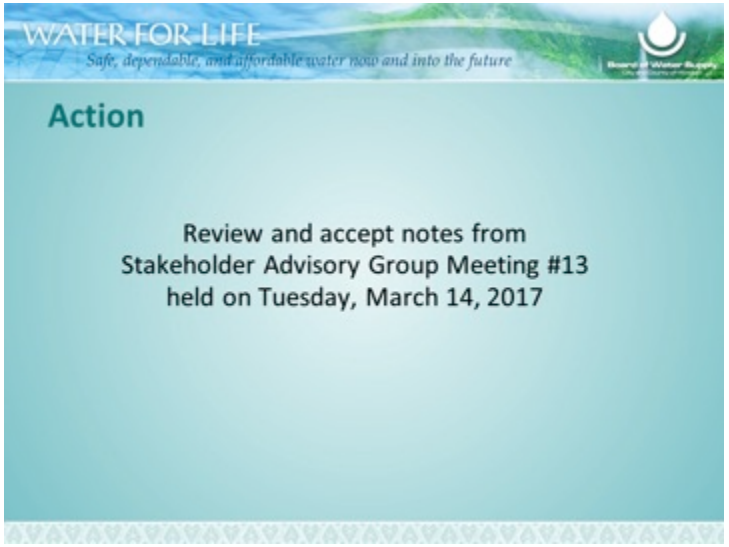
Slide 3


WATER FOR LIFE
Safe, dependable, and affordable water now and into the future
Public Comments on Agenda Items

Slide 4


WATER FOR LIFE
Safe, dependable, and affordable water now and into the future
Meeting Objectives
Receive updates regarding the BWS
Reach consensus on the draft financial policies and make a recommendation for the Board's consideration
Examine pipeline replacement scenarios, including anticipated breaks and costs, and provide recommendation on preferred scenario
Learn about the existing water rates and structure and how funds are used

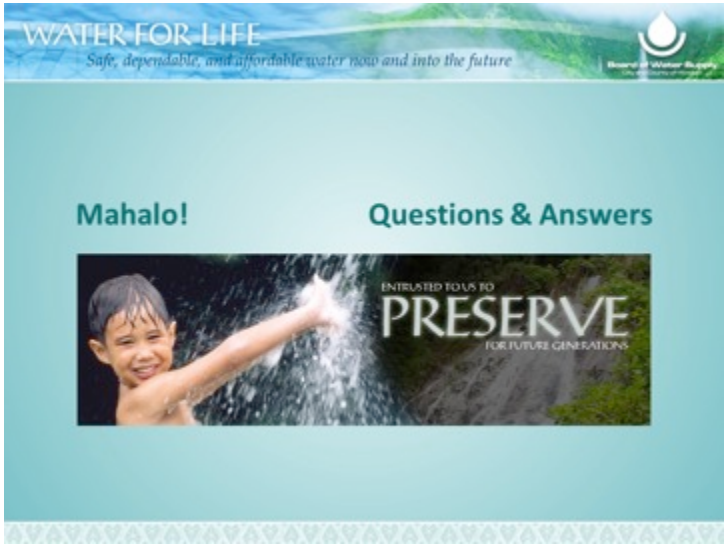
Slide 5


WATER FOR LIFE
Safe, dependable, and affordable water now and into the future
Action
Review and accept notes from
Stakeholder Advisory Group Meeting #13
held on Tuesday, March 14, 2017

Slide 6


WATER FOR LIFE
Safe, dependable, and affordable water now and into the future
Ernest Lau P.E.
BWS Manager and Chief Engineer
BWS UPDATES

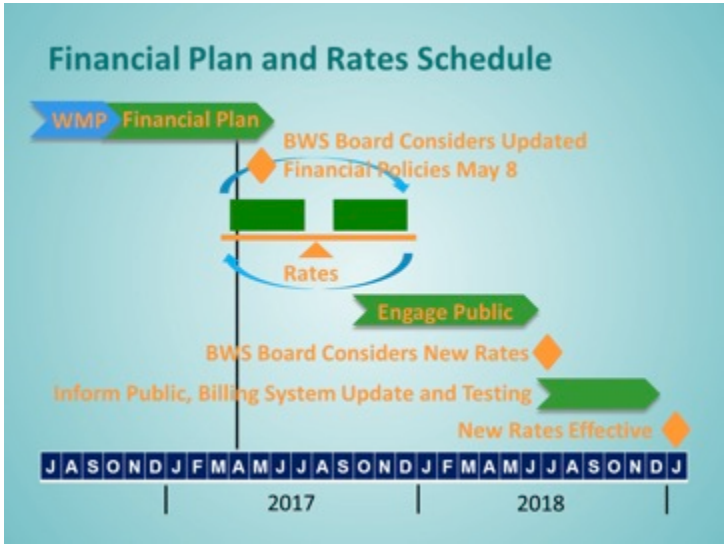
Slide 7


WATER FOR LIFE
Safe, dependable, and affordable water now and into the future
Mahalo!
Questions & Answers
ENTRUSTED TO US TO
PRESERVE
FOR FUTURE GENERATIONS

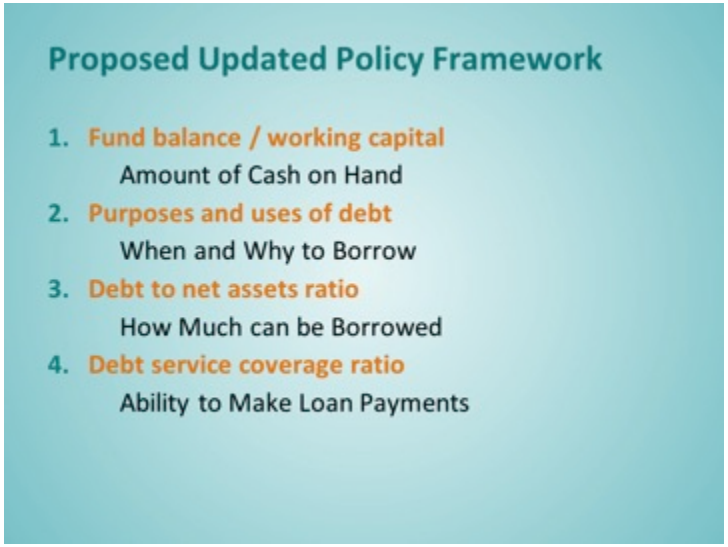
Slide 8


WATER FOR LIFE
Safe, dependable, and affordable water now and into the future
Board of Water Supply
Dave Ebersold
Facilitator
STAKEHOLDERS' RECOMMENDATIONS ON FINANCIAL POLICIES

Slide 9


Financial Plan and Rates Schedule
WMP
Financial Plan
BWS Board Considers Updated
Financial Policies May 8
Rates
Engage Public
BWS Board Considers New Rates
Inform Public, Billing System Update and Testing
New Rates Effective
J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J
2017
2018

Slide 10


Proposed Updated Policy Framework
1. Fund balance / working capital
Amount of Cash on Hand
2. Purposes and uses of debt
When and Why to Borrow
3. Debt to net assets ratio
How Much can be Borrowed
4. Debt service coverage ratio
Ability to Make Loan Payments

1. Fund Balance / Working Capital (Amount of Cash on Hand)

POLICY

Current

- Unrestricted fund balance = 45 days of operating expenses
- Includes annual debt service
- Allows setting aside net revenues that exceed budget for general contingencies (no limits)

Straw Man

- Target 180 days, never less than 60 days
- Exclude annual debt service (for consistency)
- Achieve gradually over 10 years to minimize rate impacts
- Supplement cash with other cost-effective financial tools, e.g. insurance, lines of credit, commercial paper
- >180 days may be re-programmed to fund CIP

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2. Purposes and Uses of Debt (When and Why to Borrow)

POLICY

Current

- Select most economical financing source
- Term of debt limited to life of facility it is funding
- Cannot fund operations & maintenance
- No more than 20% variable rate debt
- Pay-as-you-go funding "...in a range in conjunction with debt to net assets ratio."

Straw Man

- Select most economical financing source
- Term of debt limited to life of facility it is funding
- Cannot fund operations & maintenance
- No more than 20% variable rate debt

3. Debt to Net Assets Ratio (How Much Can be Borrowed)

POLICY

Current
- 40% to 50% debt to net assets ratio

Straw Man
- No more than 50% debt to net assets ratio

4. Debt Service Coverage Ratio (Ability to Make Loan Payments)

POLICY

Current
- 1.6x senior annual debt service
- 1.3x junior annual debt service

Straw Man
- 1.7x senior annual debt service
- 1.6x total annual debt service "all in"

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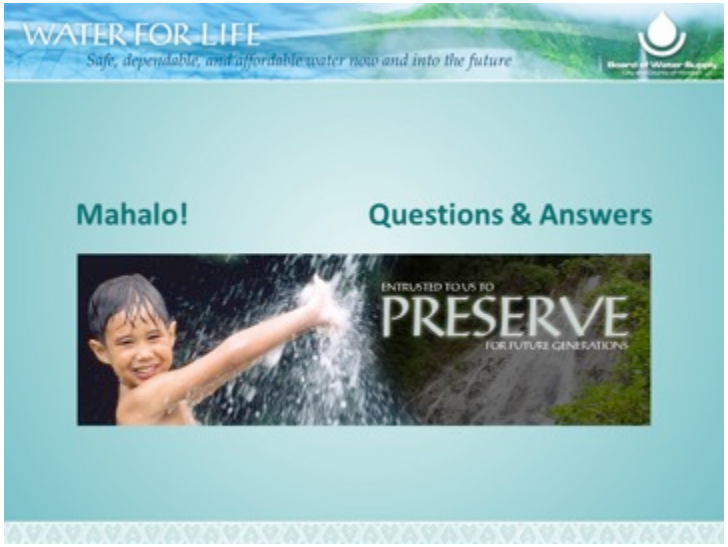
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- We are looking for Stakeholder input on the preferred scenario to carry forward into the financial planning process, and ultimately to use as a basis for establishing future water rates.
- This builds upon the input the Stakeholders provided several meetings back regarding the range of alternatives to further evaluate.
- This meeting presented the results of that further evaluation.

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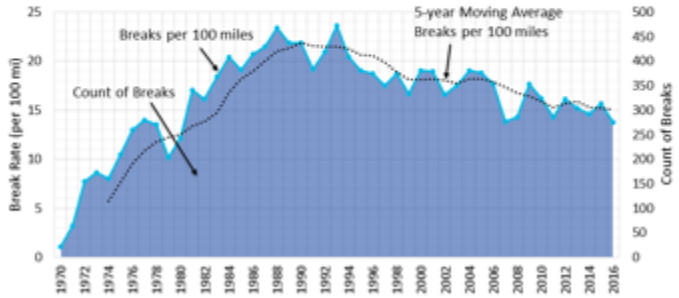
Current Outlook

300 Breaks (5 yr avg)	Trend (5 yr avg)	On Par ✓ (AWWA Guidance)	40 Years (avg pipe age)	R&R Rate (Below AWWA Guidance)



Goal of Projections

- Forecast main breaks for various financial planning scenarios
- Understand the effect of pipeline replacement rate (and thus CIP $) on break rate
- Utilize BWS data rather than industry-estimated design lives

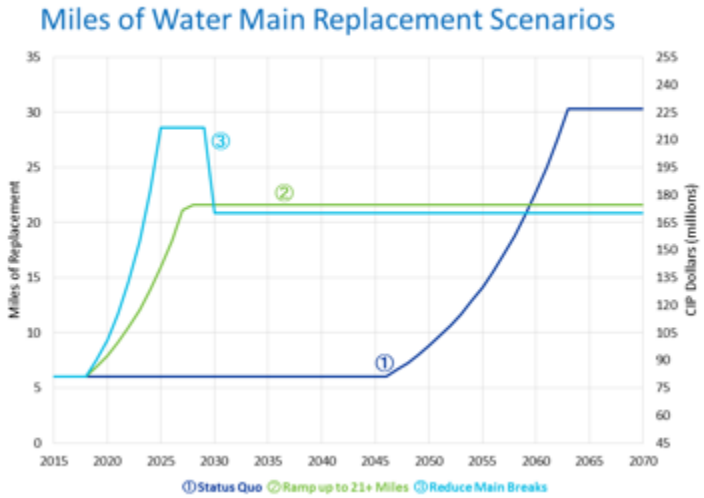
→ How effective is "buying down" the break rate?

- "Design life" is the amount of time something is designed to last, and is affected by things such as choice of materials, protective coatings, etc.

Approach to Projecting Break Rate

- Utilize break predictions for each individual pipe section from the BWS statistical break model
  - Forecast expected breaks out 60 years
- Each year “replace” [X] miles of old pipe (per Scenario)
  - Replace pipes in order of risk
- For each mile of pipe replaced, a similar length of new pipe is added that reflects the averaged system-wide break characteristics

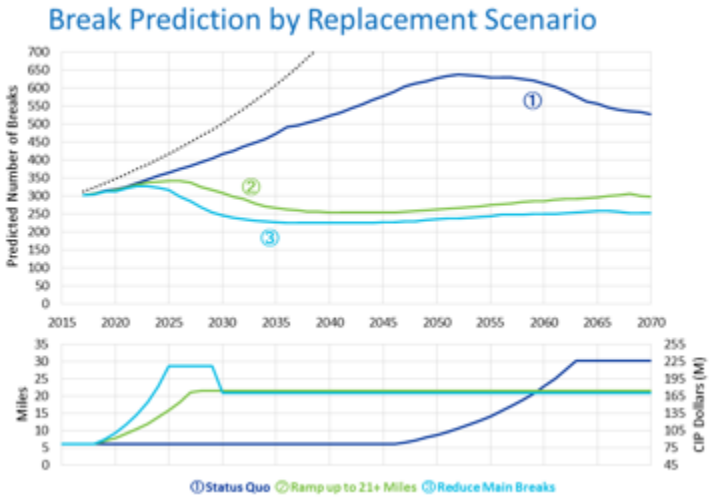
Slide 20



This analysis supersedes what was shown previously.

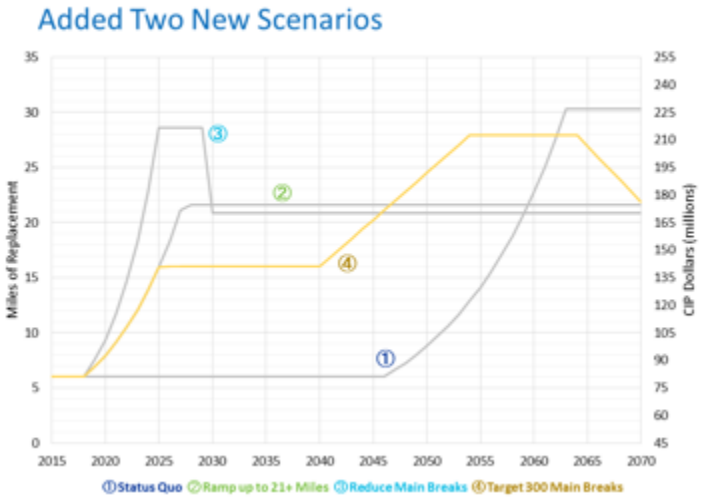
- Scenario 1 is the status quo, about 6 miles of pipe replacement per year.
- Scenario 2 replaces 21+ miles per year, a rate of about 1% per year, or the whole system in about 100 years, which is the expected lifespan.
- Scenario 3 rapidly increases the rate of pipe replaced each year with the expectation of reducing future main breaks.

Slide 21



- Scenario 3 was expected to reduce main breaks.
- It was a pleasant surprise that Scenario 2 reduced breaks in the medium- to long-term as well.

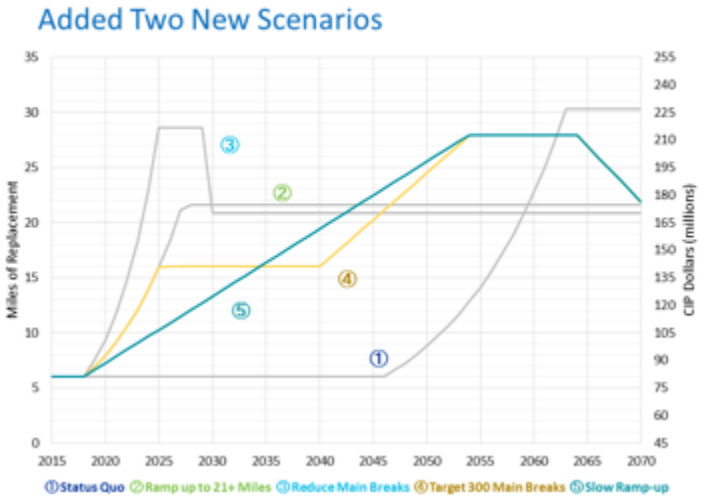
Slide 22



- Following the results above, two additional scenarios were developed to better refine the understanding of the balance between the rate of pipe replacement, which results in rate increases, and the expected number of main breaks.

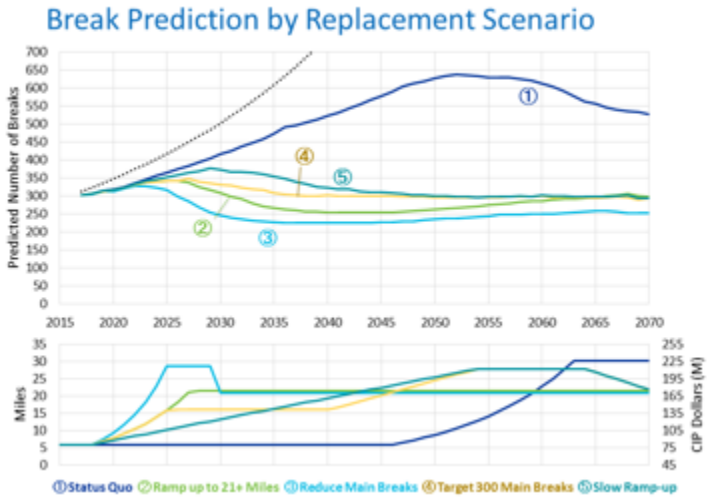
- Scenario 4 varies the rate of pipe replacement in an attempt to maintain the current rate of about 300 breaks per year.

Slide 23

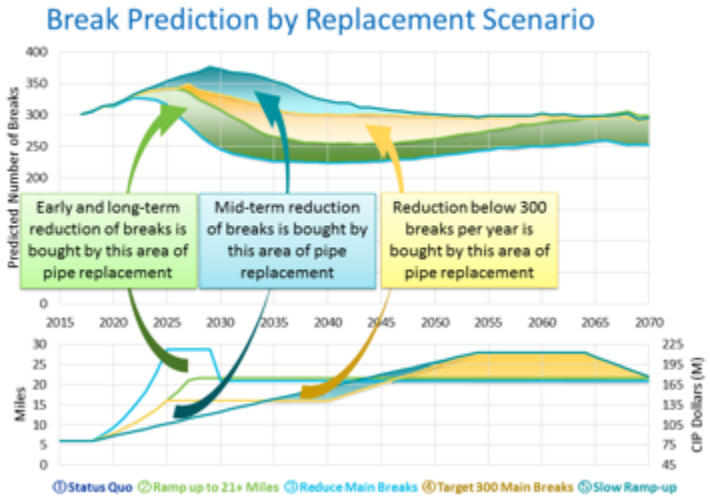


- Scenario 5 takes a more gradual approach to see if the same breaks rate could be achieved for lower cost.

Slide 24


Break Prediction by Replacement Scenario
Predicted Number of Breaks
700
650
600
550
500
450
400
350
300
250
200
150
100
50
0
2015
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
①
②
③
④
⑤
Miles
35
30
25
20
15
10
5
0
CIP Dollars (M)
255
225
195
165
135
105
75
45
①Status Quo ②Ramp up to 21+ Miles ③Reduce Main Breaks ④Target 300 Main Breaks ⑤Slow Ramp-up

Slide 25


Break Prediction by Replacement Scenario
Predicted Number of Breaks
400
350
300
250
200
0
Early and long-term reduction of breaks is bought by this area of pipe replacement
Mid-term reduction of breaks is bought by this area of pipe replacement
Reduction below 300 breaks per year is bought by this area of pipe replacement
2015
2020
2025
2030
2035
2040
2045
2050
2055
2060
2065
2070
Miles
30
25
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①Status Quo ②Ramp up to 21+ Miles ③Reduce Main Breaks ④Target 300 Main Breaks ⑤Slow Ramp-up

Comparison (2017-2070)

	②Ramp up to 21+ Miles	③Reduce Main Breaks	④Target 300 Breaks	⑤Slow Ramp-up
Total Breaks	15,545	13,778	16,647	17,339
Miles of Pipe Replaced	1,057	1,094	1,067	1,060
Avg. Breaks per Year	293	260	314	327
Year 200 miles is reached	2030	2028	2032	2034

- Scenarios 2, 4, and 5 result in similar totals of miles of required pipe replacement (and thus total cost), but on different timeframes.
- As a result, the impacts on the revenue requirement, especially in the near-term, are very different for each.
- In general, it costs about $150k to avoid a break.

Near-Term Revenue Requirement Impacts of Different CIP Scenarios

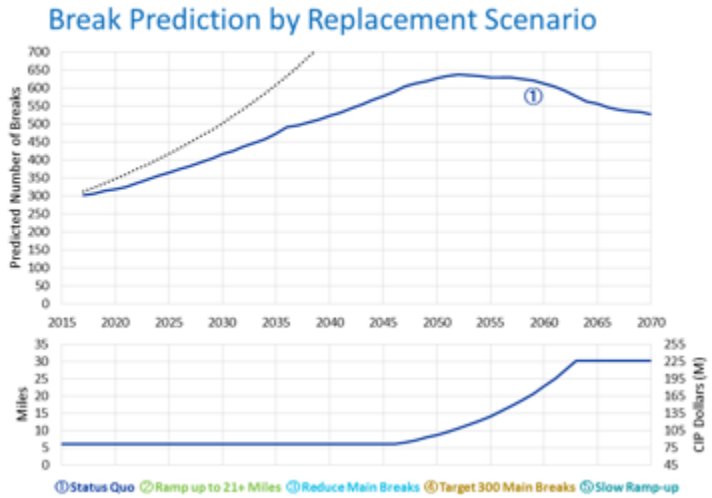
	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Cumulative Total
⑤Slow Ramp-up	0	0	0	2.5	0	0	3.0	3.0	0.5	0	0	9.3%
④Target 300 Main Breaks	0	0	0	4.0	2.25	2.5	3.0	3.0	0.5	0	0	16.2%
②Ramp up to 21+ Miles	0	0	0	4.0	2.25	2.5	3.0	3.0	1.0	1.0	1.0	19.1%
③ Reduce Main Breaks	0	0	0	7.0	3.5	3.5	4.0	4.5	6.5	6.5	7.0	51.2%

- Only shows changes resulting from pipe replacement
- Compared to status quo CIP of $80 million escalated by CPI

Comparison (2017-2070)

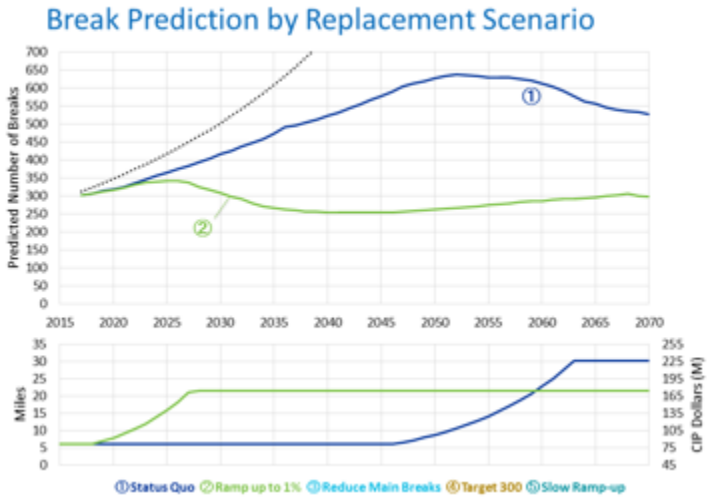
②Ramp up to 21+ Miles	③Reduce Main Breaks	④Target 300 Main Breaks	⑤Slow Ramp-up
PROS			
-Reduces breaks in the medium-term -Steadier long-term rate of replacement -Steady long-term revenue requirements	-Reduces breaks sooner -Removes higher-risk pipes sooner	-Maintains 300 breaks in the medium to long-term -More feasible increase in rate of replacement	-Steady pace of pipe replacement -Lower near-term costs -Most feasible increase in rate of replacement -Steady increases in costs
CONS			
-Higher near-term costs	-Difficult to implement -Highest near-term costs -Modest long-term benefit for near-term costs	-More variable pipe replacement rates and costs -Moderate near-term costs -Pushes some costs to future generations	-Moderately higher break rate -Pushes more costs to future generations

Slide 29



- Scenario 4 is the status quo level of service for breaks, but not risk.

Slide 30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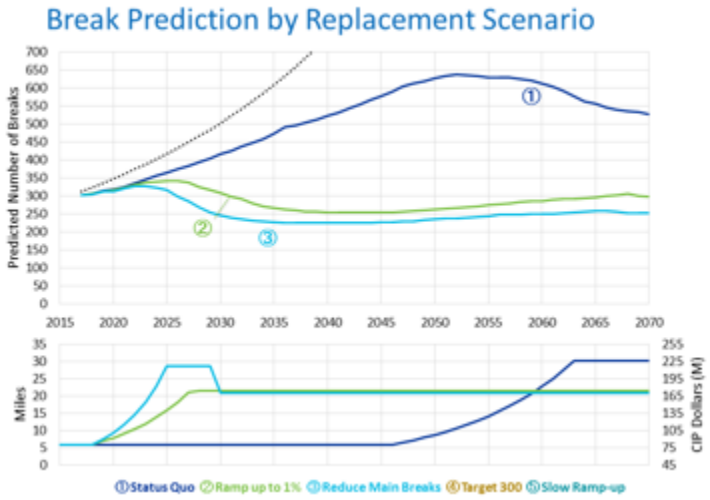
①Status Quo ②Ramp up to 1% ③Reduce Main Breaks ④Target 300 ⑤Slow Ramp-up

Slide 31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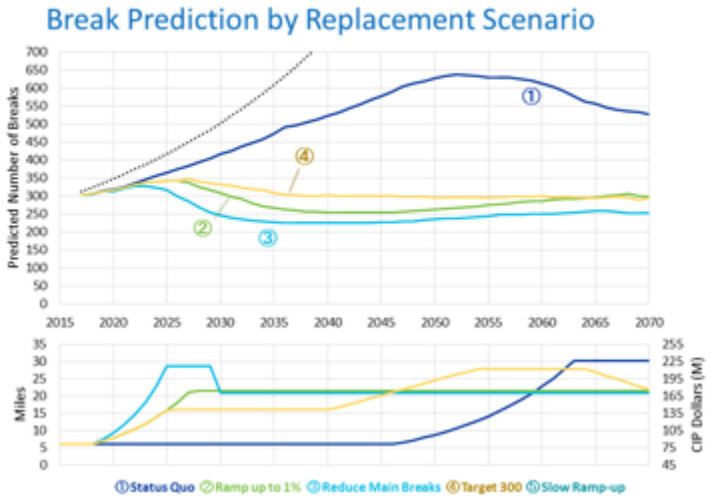
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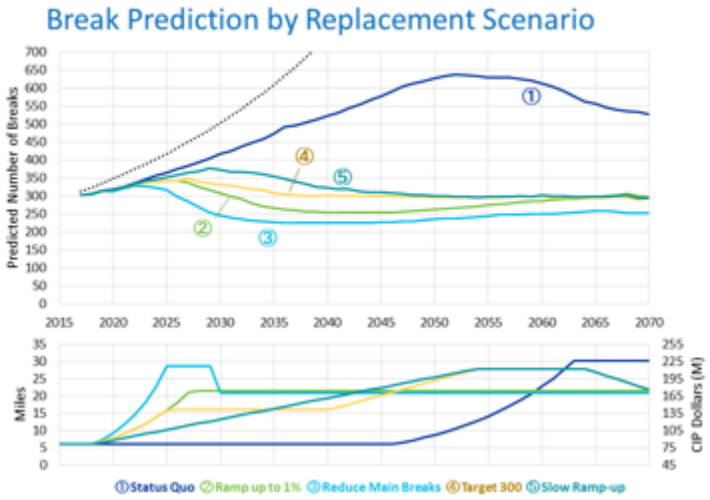
Slide 33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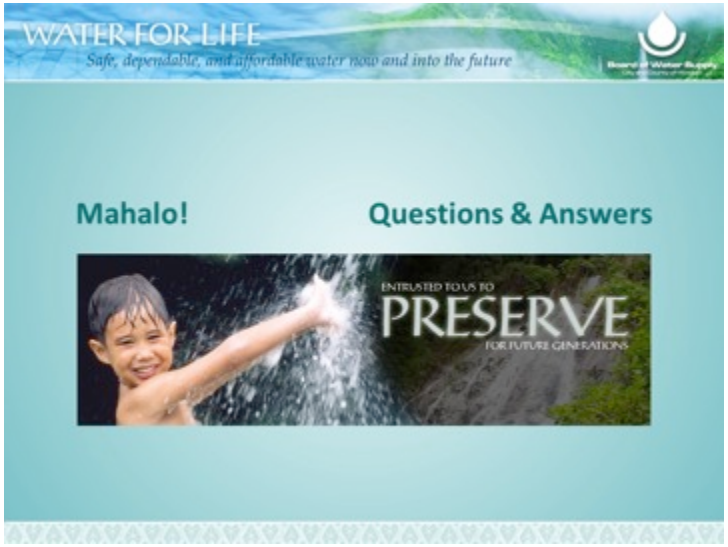
Slide 34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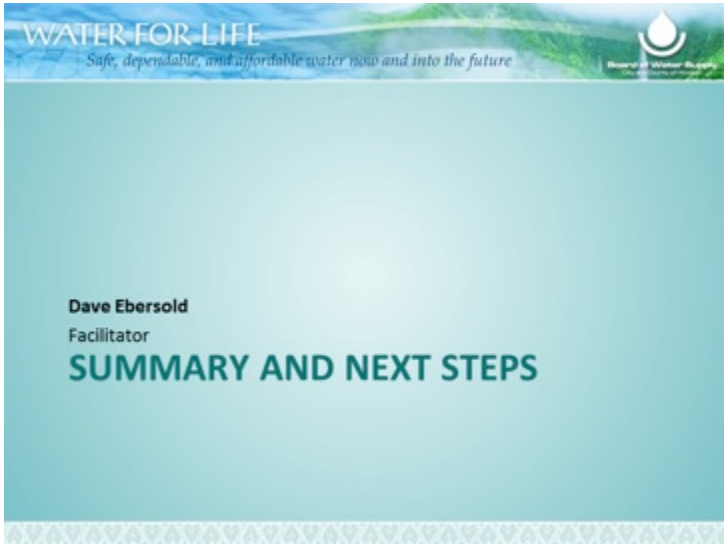
This presentation was deferred to the May 2017 meeting.

Slide 36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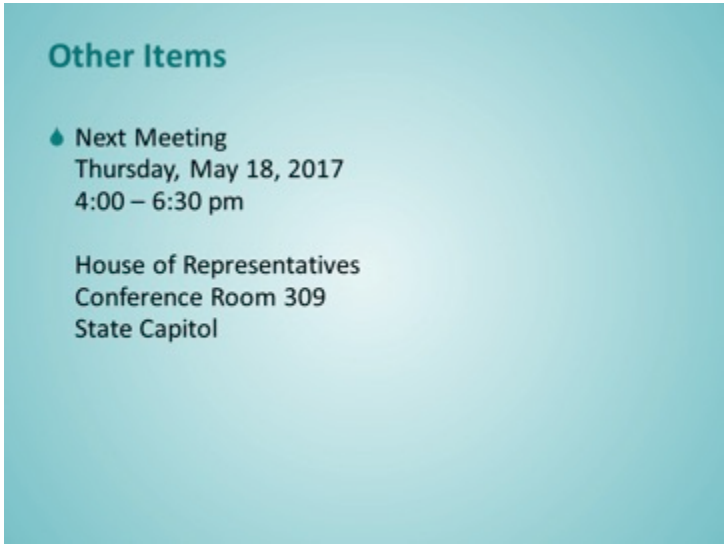
Dave Ebersold
Facilitator
SUMMARY AND NEXT STEPS

Slide 37


Other Items
Next Meeting
Thursday, May 18, 2017
4:00 – 6:30 pm
House of Representatives
Conference Room 309
State Capitol

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