



CONSOLIDATED COMMISSION ON UTILITIES

Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

**GUAM WATERWORKS AUTHORITY
SPECIAL WORK SESSION
CCU Conference Room
4:00 p.m., April 10, 2018**

AGENDA

1. **ISSUES FOR DISCUSSION**
 - 1.1 **DRAFT GWA Master Plan**
2. **ANNOUNCEMENTS**
 - 2.1 **Next CCU Meetings: GWA Work Session - 4/17; GPA Work Session 4/19; CCU Meeting: 4/20**
3. **EXECUTIVE SESSION**
 - 3.1 **Litigation Matter**
 - 3.2 **Personnel Matter**
4. **ADJOURNMENT**



Water Resources Master Plan Update



2006

2018

Setting New Standards for a
Well-run, Sustainable Utility

GWA's Extensive Infrastructure

Water System

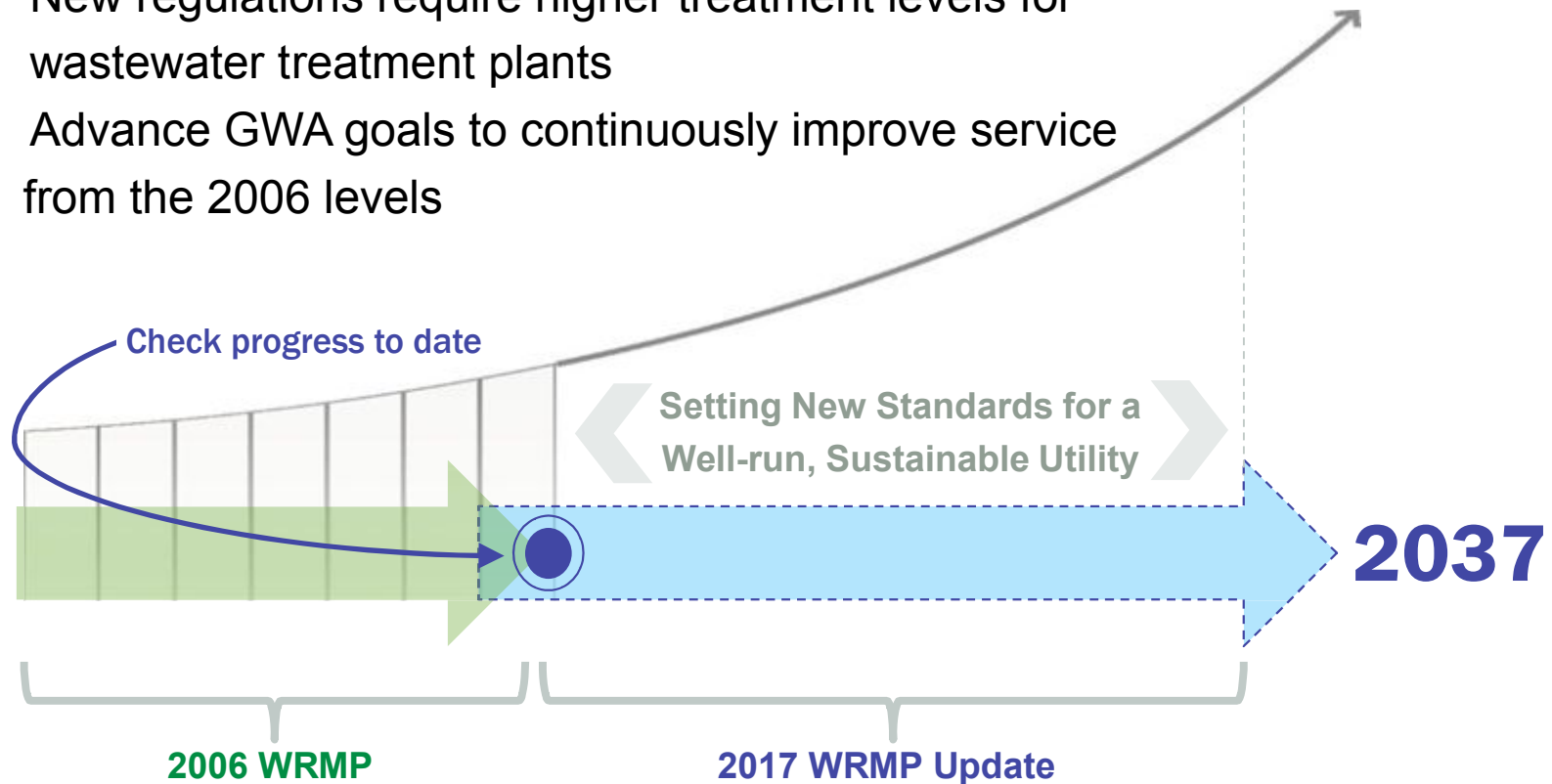
- ~47,800 customers
- 580+ miles of distribution piping
- 26 storage tanks
- 22 booster pump stations
- 120 water supply wells
- 1 surface water treatment plant

Wastewater System

- ~30,400 customers
- 320+ miles of collection system piping
- 82 wastewater lift stations
- 7 wastewater treatment plants

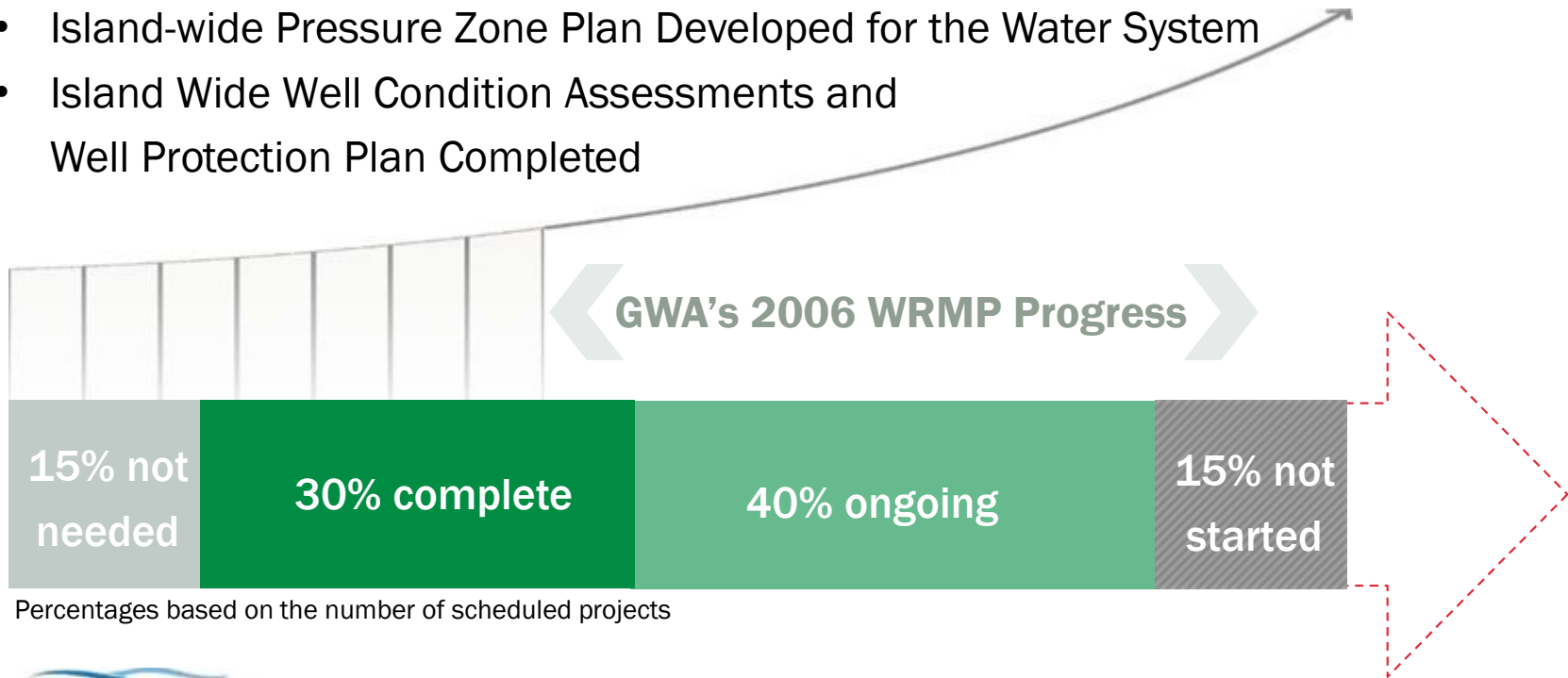
Why update the WRMP?

- GWA infrastructure has aged 10 years since the first WRMP
- Military relocation brings 5,000 marines to Guam
- New regulations require higher treatment levels for wastewater treatment plants
- Advance GWA goals to continuously improve service from the 2006 levels



A decade of progress is paying off

- Ugum Treatment Plant Upgrade Completed
- Hagåtña and Northern District WWTP Upgrades Completed
- Six Water Storage Tanks Constructed with Capacity of 6 Million Gallons
- Water and Wastewater System Hydraulic Models Significantly Updated
- Navy Water Use Reduced By Over 50 Percent Between 2004 And 2016
- Island-wide Pressure Zone Plan Developed for the Water System
- Island Wide Well Condition Assessments and Well Protection Plan Completed



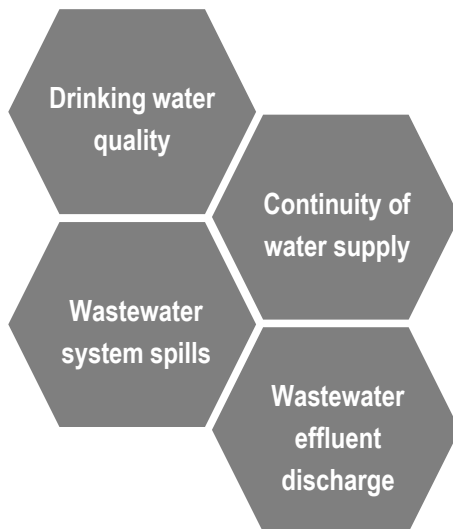
Percentages based on the number of scheduled projects

New Expectations Set for GWA

New Levels of Service goals set in 2017 Plan

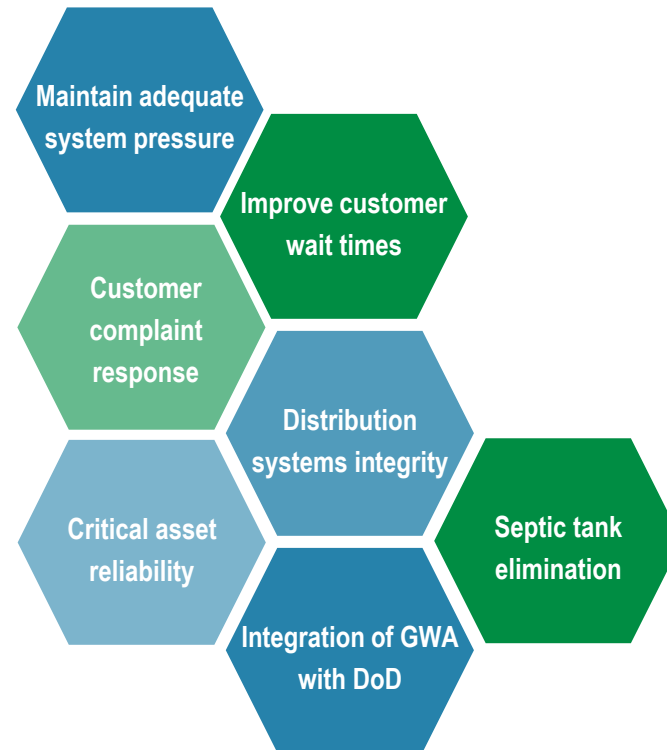
2006 WRMP

Limited to 4 fundamental Service Level Goals



2017 WRMP Update

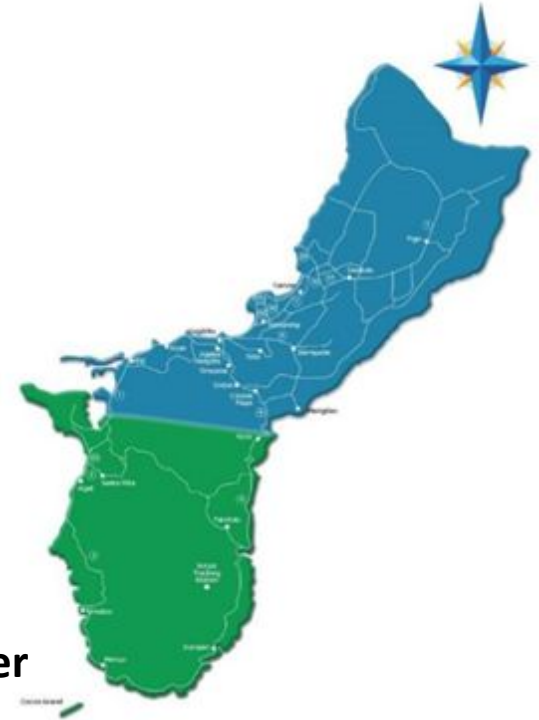
Increased to 16 Service Level Goals



See Volume 1, Section 3 for complete Service Level list

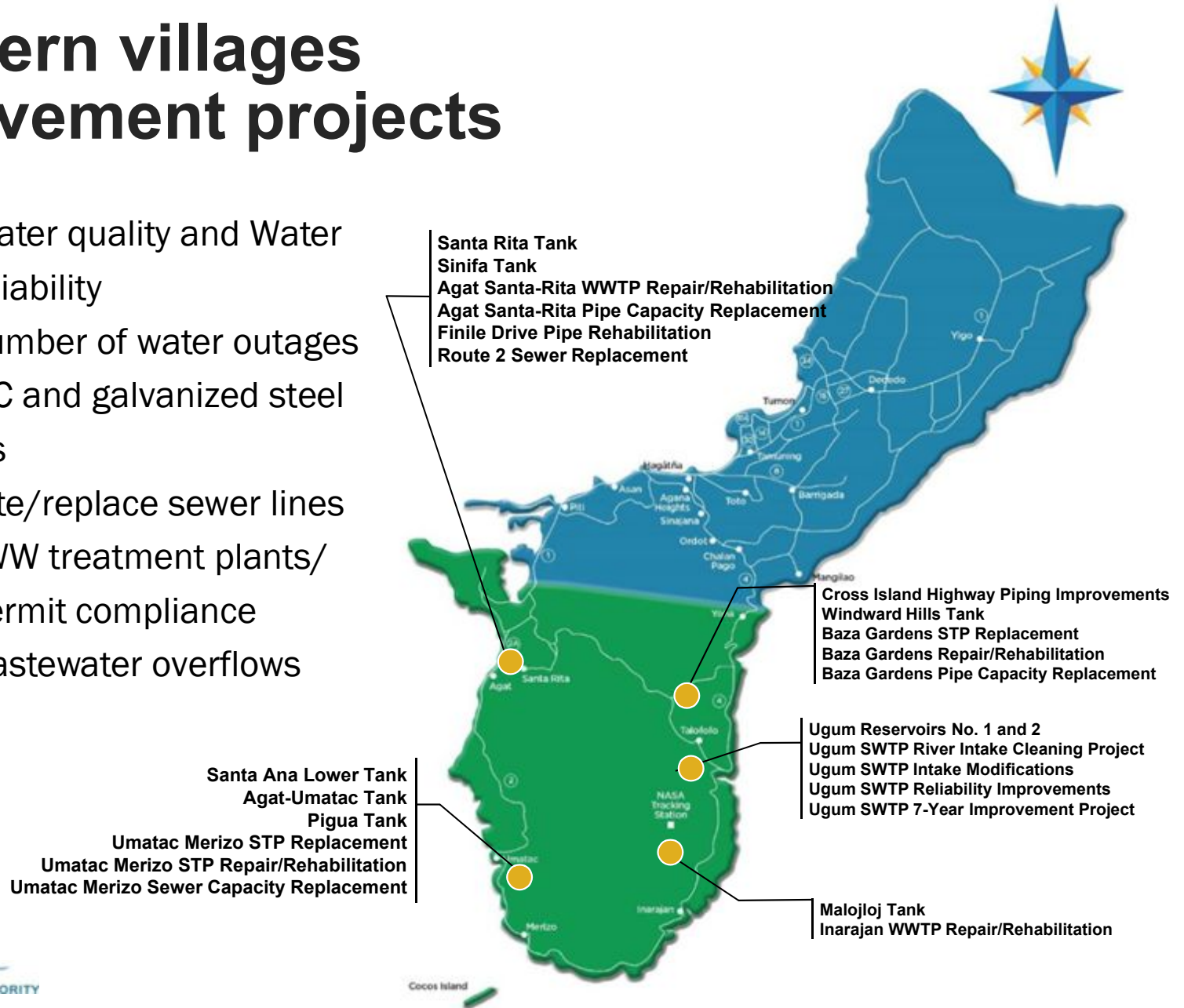
Island-wide improvement projects/programs

- Well Development and Construction - \$4.6M every 3 yrs
- Well Rehabilitation - \$5.8M every 3 yrs
- PRV Rehabab and Replacement – \$1.5M/yr for 5-yrs
- Water Reservoir Inspections - \$215K/yr
- Leak Detection Program - \$380K every 5 yrs
- Fire Hydrant Replacement \$970K/yr for 5yrs, \$530k/yr after
- 2-Inch Pipe Replacement -\$1.75M/yr
- Asbestos Cement Pipe Replacement -\$3.85M/yr (start in 2022)
- Force Main Rehabilitation/Replacement -\$1.6M every 3 yrs
- Gravity Sewer Rehabilitation/Replacement - \$8.5M/yr
- Lift Station Rehabilitation/Replacement – 5.5M every 2yrs
- I/I and SSES Assessments - \$400K every 3 yrs
- Septic/Cesspool System Reduction - \$5.2M/yr



Southern villages improvement projects

- Improve water quality and Water System reliability
- Reduce number of water outages
- Replace AC and galvanized steel water lines
- Rehabilitate/replace sewer lines
- Upgrade WW treatment plants/ Federal Permit compliance
- Reduce wastewater overflows



Central villages improvement projects

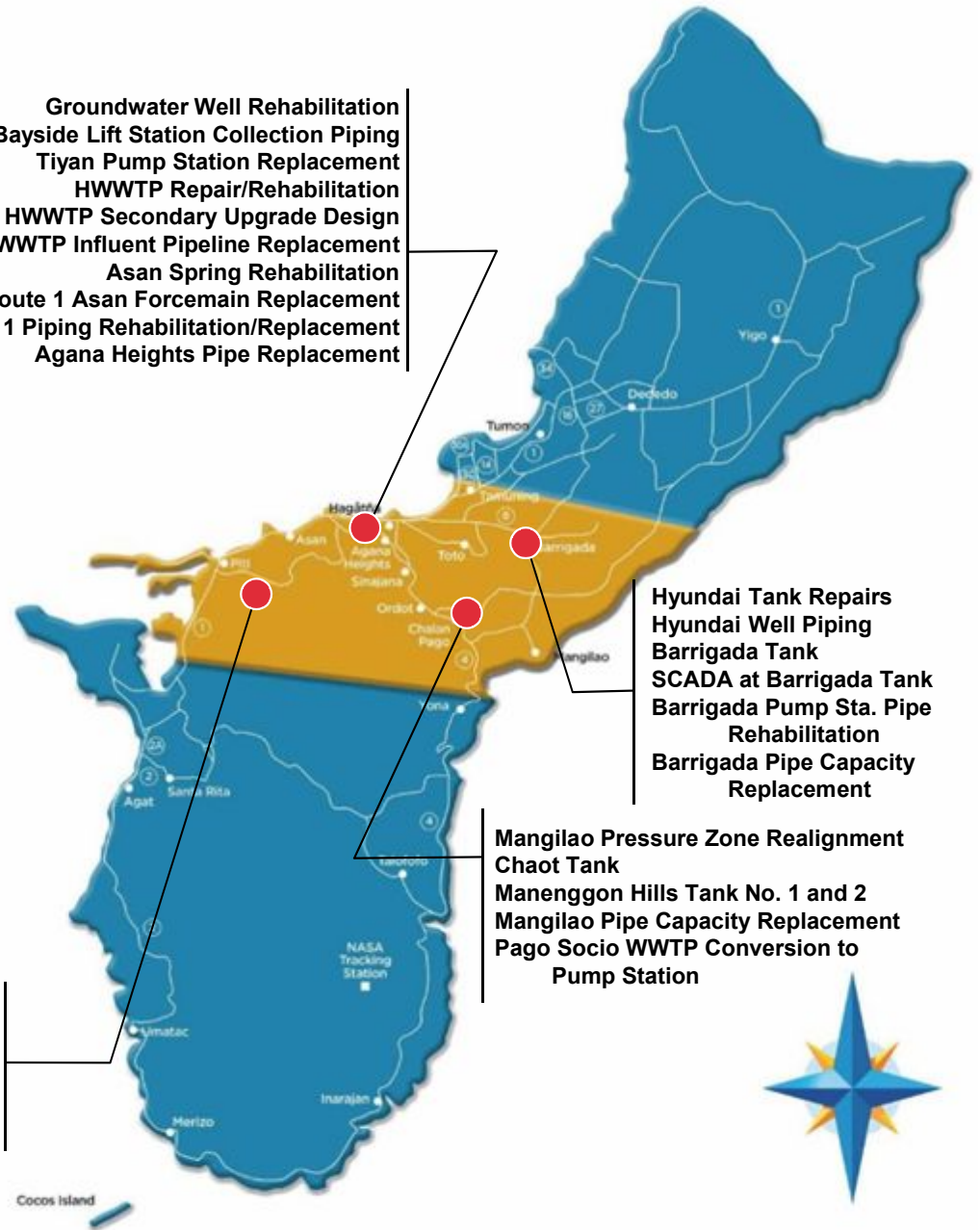
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Groundwater Well Rehabilitation
 Bayside Lift Station Collection Piping
 Tiyan Pump Station Replacement
 HWWTP Repair/Rehabilitation
 HWWTP Secondary Upgrade Design
 HWWTP Influent Pipeline Replacement
 Asan Spring Rehabilitation
 Route 1 Asan Forcemain Replacement
 Route 1 Piping Rehabilitation/Replacement
 Agana Heights Pipe Replacement

Hyundai Tank Repairs
 Hyundai Well Piping
 Barrigada Tank
 SCADA at Barrigada Tank
 Barrigada Pump Sta. Pipe Rehabilitation
 Barrigada Pipe Capacity Replacement

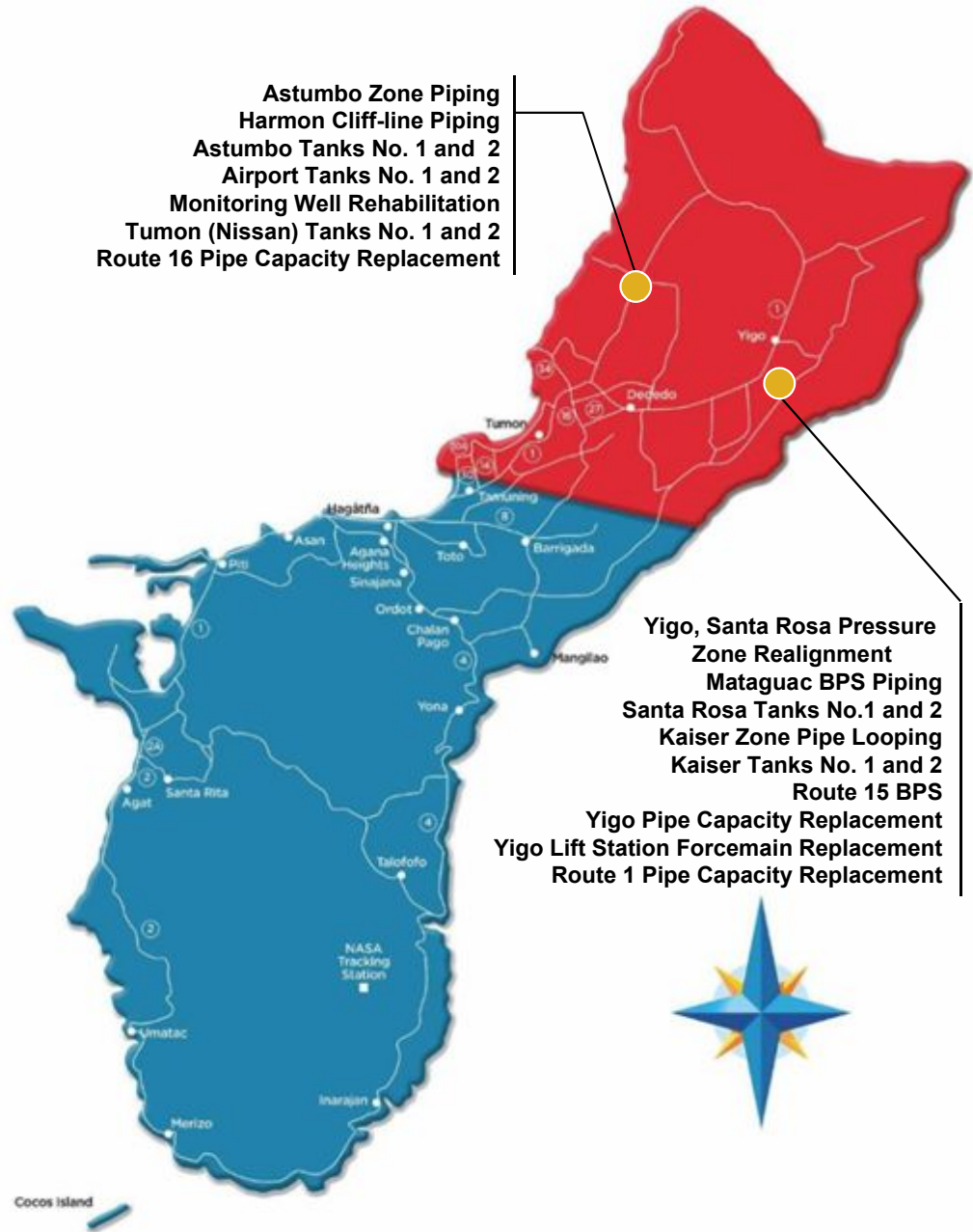
Mangilao Pressure Zone Realignment
 Chaot Tank
 Manenggon Hills Tank No. 1 and 2
 Mangilao Pipe Capacity Replacement
 Pago Socio WWTP Conversion to Pump Station

Nimitz Hill Lower BPS
 Nimitz Hill Tank A
 Nimitz Hill Tank B
 Nimitz Hill Upper BPS
 Piti Tank
 Route 1 Pipe Rehabilitation/Replacement



Northern villages improvement projects

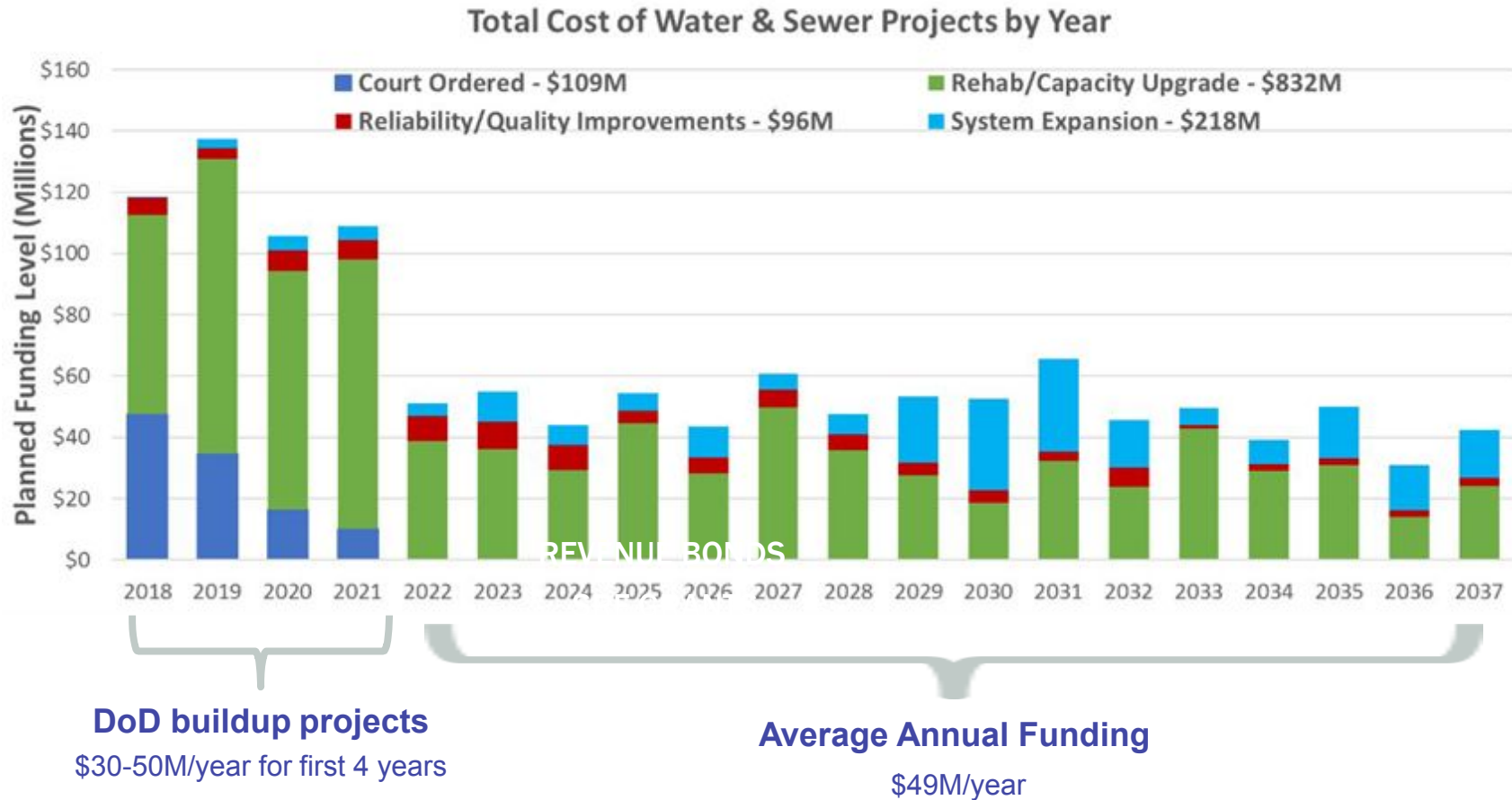
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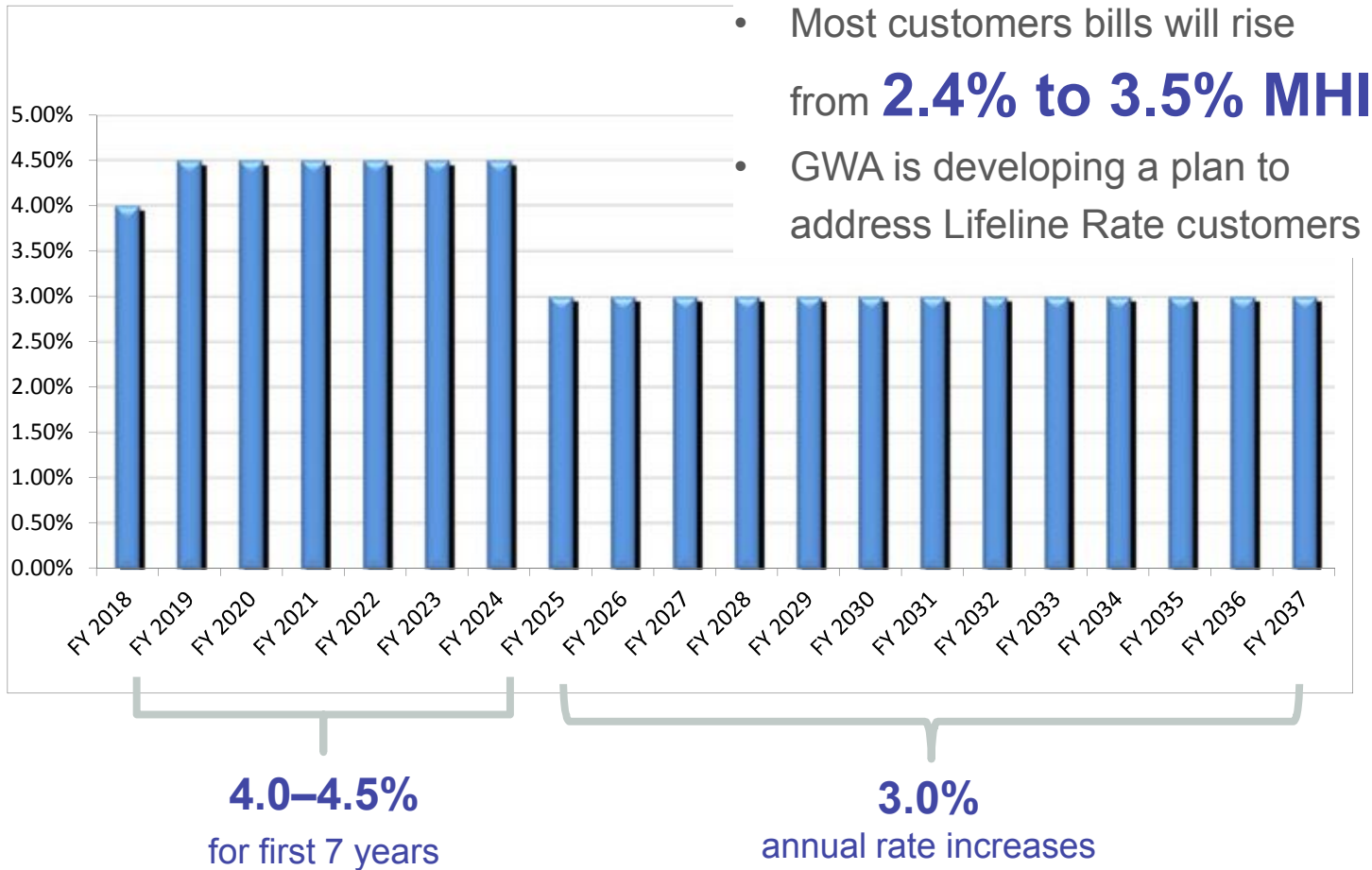
Capital Improvement Projects Summary

Project Category	Number of New Projects	Estimated Cost WRMPU Proposed CIP	Number of Ongoing Projects	Estimated Cost Current/Ongoing CIP
Water System Improvements				
Pipeline Projects	17	\$204,402,000	2	\$2,500,000
Storage Tank and BPS Projects	30	\$120,082,000	5	\$30,808,000
Water Production Projects	10	\$123,216,000	3	\$8,667,000
Other Water System Projects/Studies	5	\$14,449,000	4	\$5,500,000
Total Water System Improvements	62	\$462,149,000	14	\$47,475,000
Wastewater System Improvements				
Gravity Sewer Projects	27	\$250,247,000	7	\$69,230,000
Force main Projects	4	\$22,498,000		
Lift Station Projects	3	\$68,156,000	2	\$4,293,000
Wastewater Treatment Facilities	9	\$71,238,000	3	\$151,946,000
Other Wastewater System Projects/Studies	5	\$10,978,000		
Total Wastewater System Improvements	48	\$423,117,000	12	\$225,469,000
General Systems Improvements				
General Facilities / Equipment Improvements	10	\$59,800,000	1	
SCADA / Electrical	4	\$37,176,000	2	\$5,175,000
Total General System Improvements	14	96,976,000	3	\$5,175,000
Total (rounded)	124	\$982,242,000	29	\$278,119,000

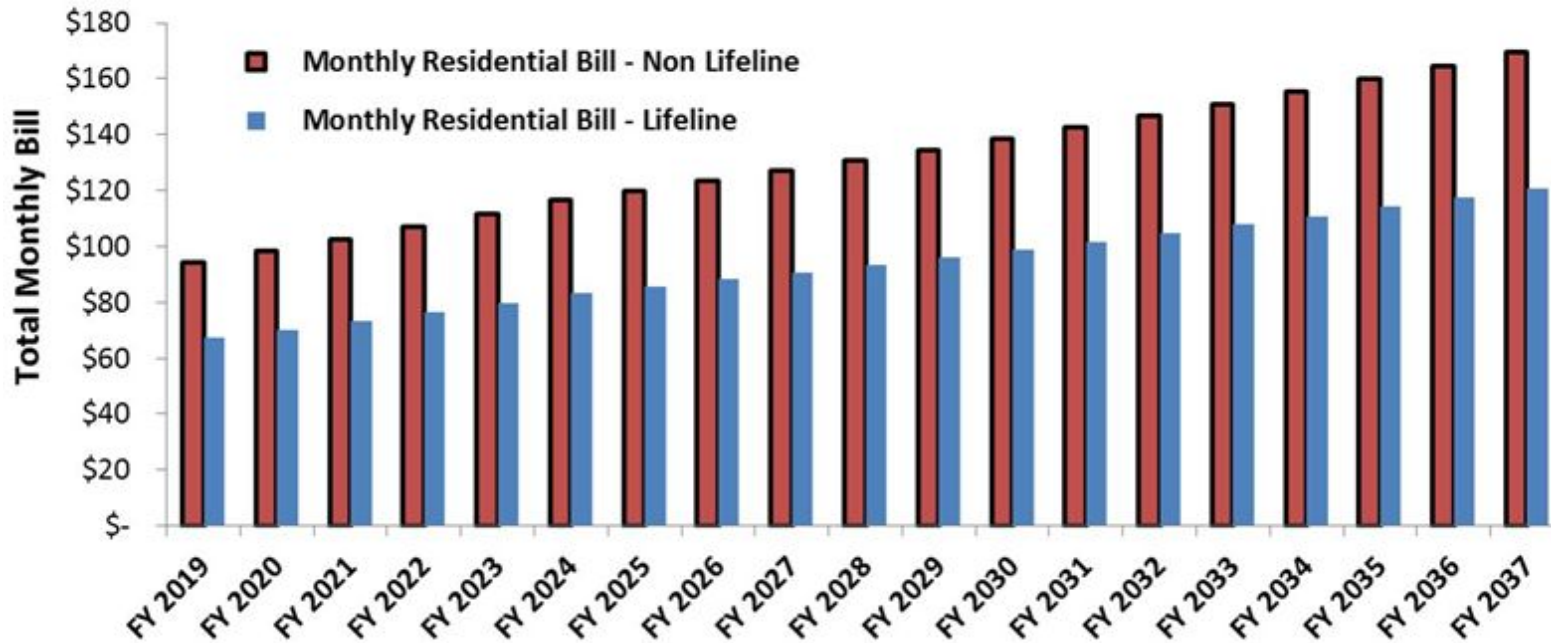
Funding needed for improvements



How will these funding needs affect service rates?



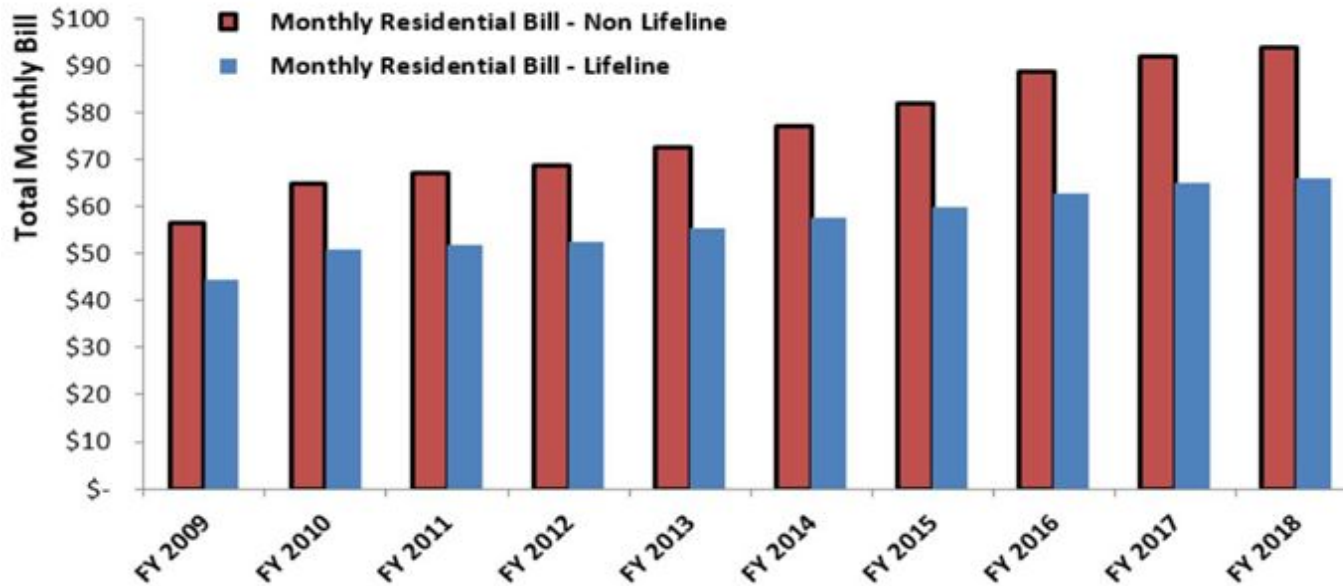
How will this affect Your Monthly Bill?



Projected Monthly Bill Increase Per Year 2018 - 2027	
Non-Lifeline	\$4.04
Lifeline	\$2.89

- Non-lifeline residential bill - 7,500 gallons
- Lifeline residential bill - 5,000 gallons

Historic Residential Bills 2009 - 2018



Average Monthly Bill Increase Per Year 2009 - 2018

Non-Lifeline	\$3.90
Lifeline	\$2.40

Summary

GWA has spent over 2-years preparing this WRMP Update to plan for a well-run, sustainable utility. The WRMP Update:

- Addresses significant legacy issues such as replacement of small diameter galvanized steel pipes
- Includes regularly scheduled projects to refurbish production wells, treatment plants and pump stations
- Includes projects to refurbish/replace failing and under capacity gravity sewer piping.
- Produces an optimized CIP program to improve our Level of Service with consideration to the impact on service rates
- Provides a realistic combination of projects with a modest impact on our required rates.

GWA is committed to implementing water affordability programs to continue services for our Lifeline customers at reasonable rates.

Access the plan

- Copies of the proposed WRMP Update will be available to view at:
 - All GWA Customer Service locations
 - Agat, Tamuning, and Yigo mayors' offices
- Interested persons can also visit the GWA website at www.guamwaterworks.org and to learn more, download the plan, and submit your comments



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AFFIDAVIT OF KELLY O. CLARK, ESQ.

1. I am over the age of eighteen (18) years and have no disability that would prevent me from rendering testimony;
2. I make this affidavit based on my own personal knowledge of the events and facts stated herein;
3. I attended the special board meeting of the Guam Waterworks Authority (GWA) on April 10th, 2018 and acted as legal counsel for GWA during said board meeting;
4. Based on my oral and written recommendation, and after an affirmative vote of all the members of the Consolidated Commission on Utilities at said board meeting, an executive session was held wherein the following matters were discussed in my presence:
 1. a GWA litigation matter
 2. a GWA personnel matter
5. Affiant further sayeth naught.

Respectfully filed with the Guam Waterworks Authority Board Secretary for the Consolidated Commission on Utilities on this April 10th, 2018.

Respectfully,

Kelly O. Clark
GWA General Counsel