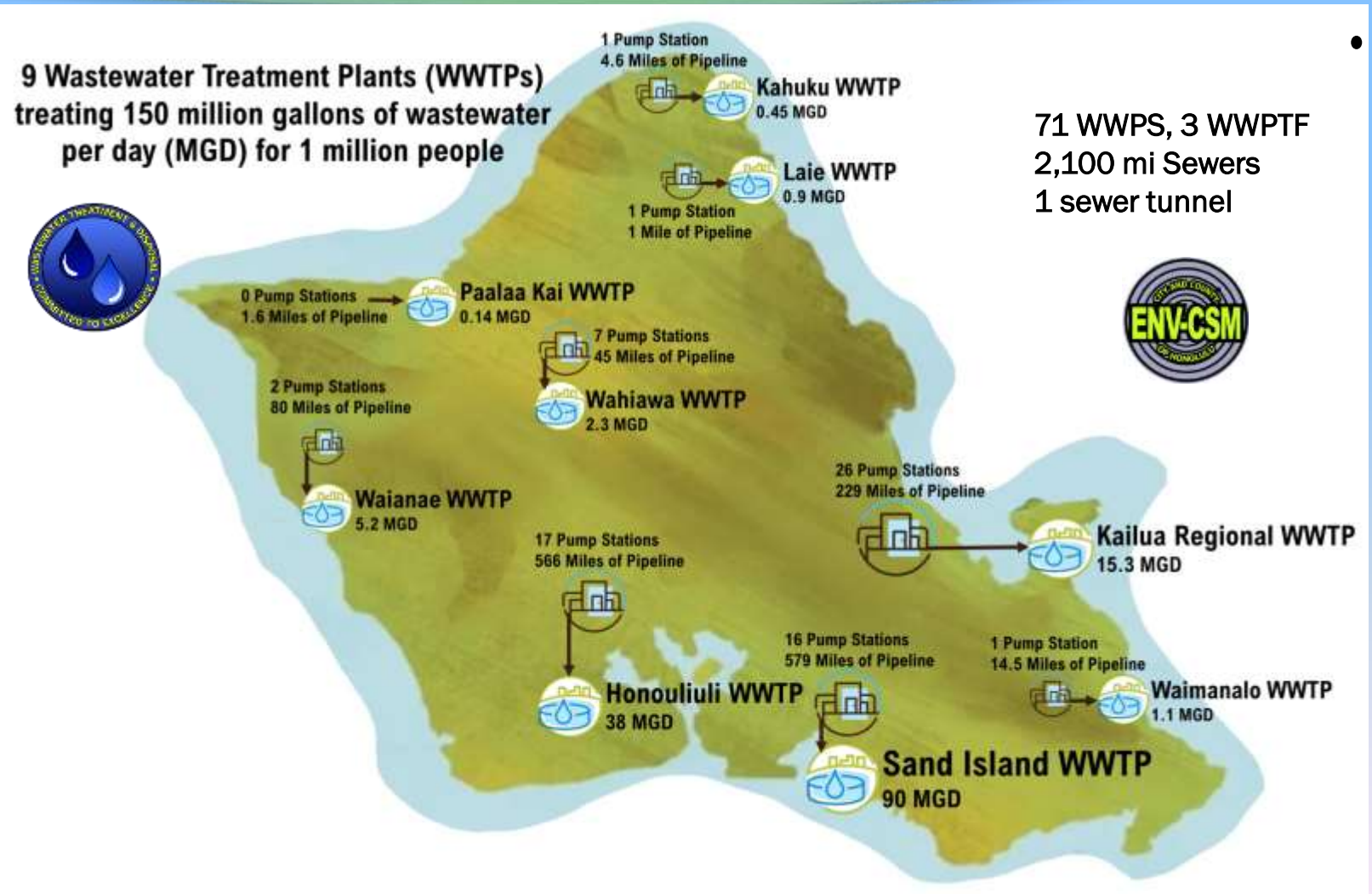
Sewer Fee Increases, Affordability, and Price Influence on Water Use

Roger Babcock Jr, Director
Director of Environmental Services (ENV)
City and County of Honolulu

David B. Ebersold
Senior Vice President
CDM Smith

HWWA: October 16, 2025

WASTEWATER SYSTEMS

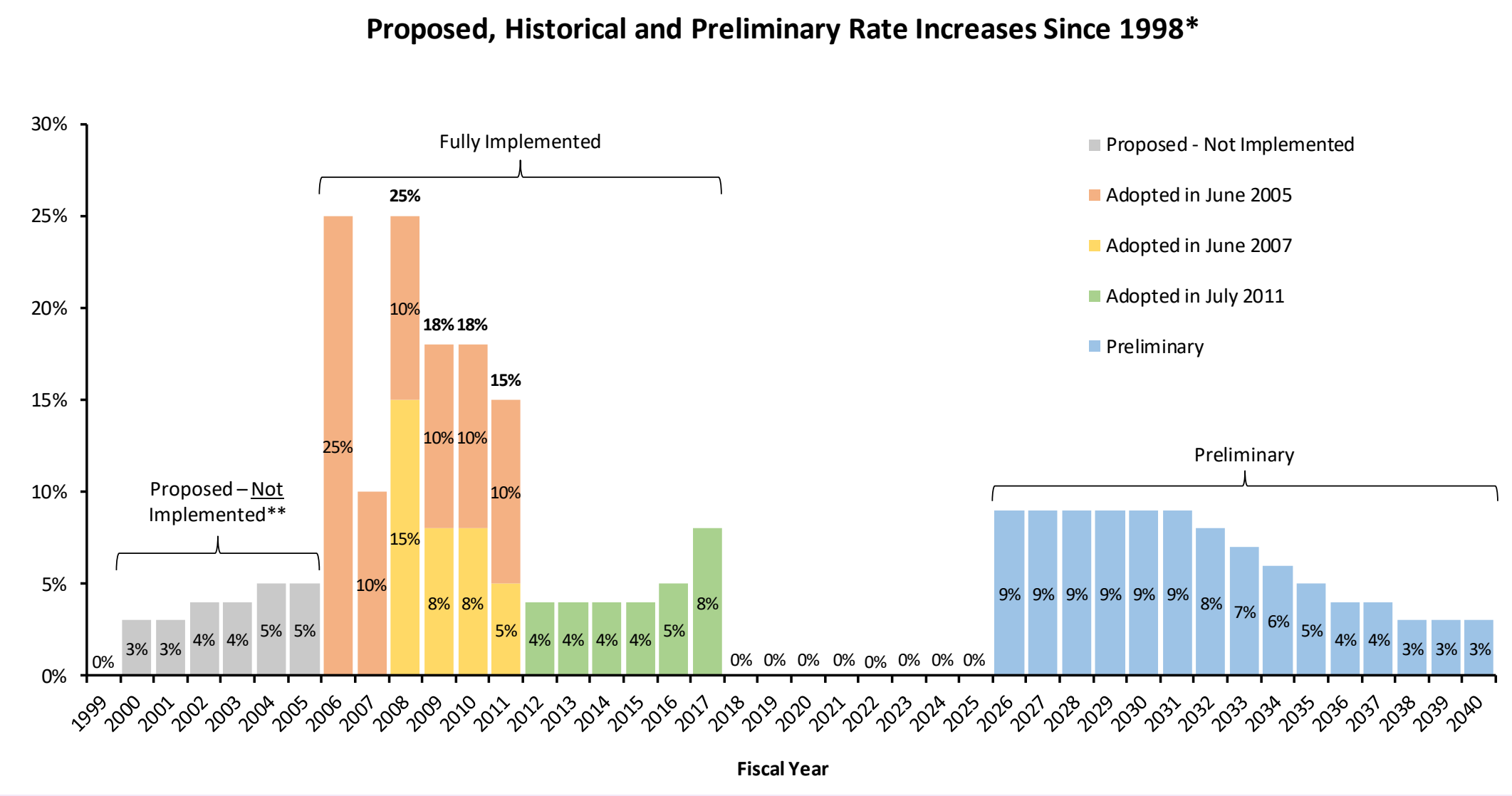


71 WWPS, 3 WWPTF
2,100 mi Sewers
1 sewer tunnel

Current Major Challenges:

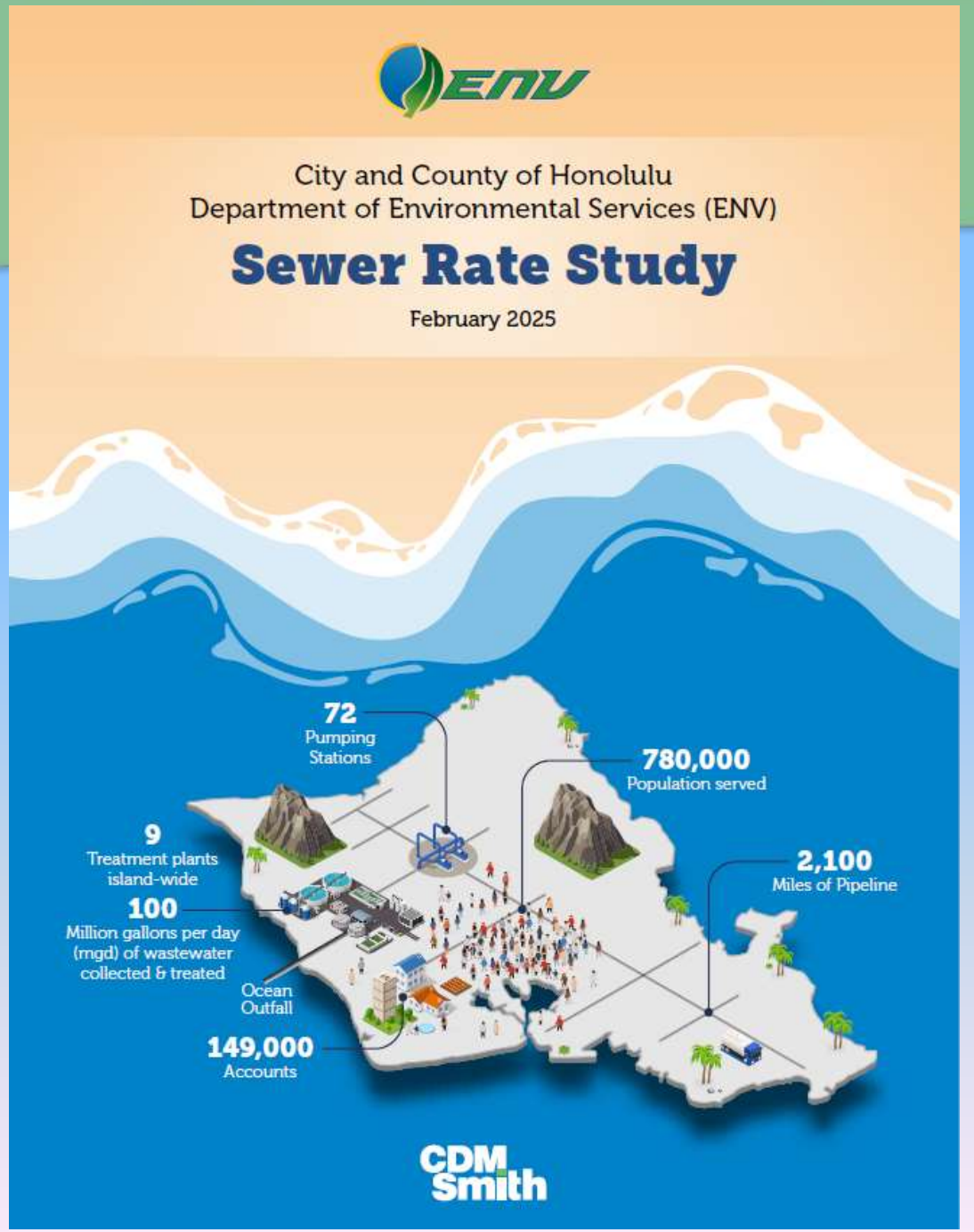
- Consent Decree, Stringent permit requirements, Dieldrin/PFOA
- Innovative processes under construction ($10.1B thru FY40):
  - Aerobic Granular Sludge, Membrane Bioreactors, Thermal Hydrolysis Process, Combined Heat and Power, Biosolids belt dryer, Primary carbon diversion process, tertiary cloth filters, advanced treatment (piloting Ultrafiltration, Ozone, GAC), Co-digestion, Automation (digital twin, on-line aeration control, smart asset management)
- No sewer fee increase since 2016
- Need for large sewer fee increase
- Affordability concerns

ENV Rate Increase History



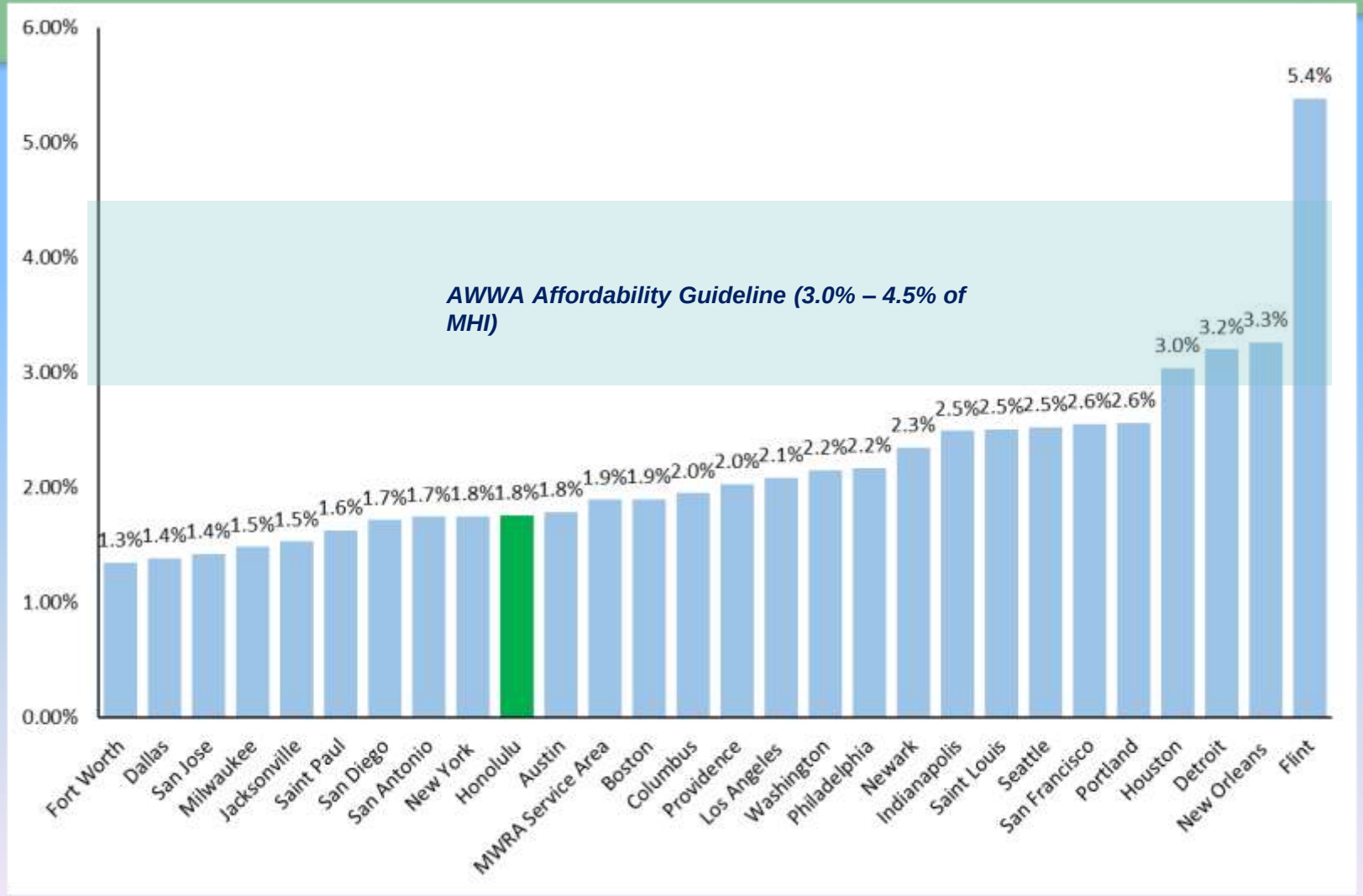
Sewer Rate Study

1. Executive Summary
2. Introduction
3. Projected Revenues Under Previously Approved Rates
4. Revenue Requirement
5. Rate Setting Approach and Rate Structure Alternatives
6. Public Outreach
7. Proposed Sewer Rate Adjustments
8. Appendices
    1. Rate Schedule
    2. Bill Examples
    3. SW-WAG Advisory Group Roster



Comparative Analysis

Combined Water & Sewer Bills as a Percentage of Median Household Income



Source: AWWA Low-Income Water Customer Assistance Program Assessment (April 20, 2023).

Rate Study Step 3/4

- 10-year rate package

Year	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
Annual % Increase	9%	9%	9%	9%	9%	9%	8%	7%	6%	5%
Total % Increase	9.0	18.8	29.5	41.2	53.9	67.7	81.1	93.8	105.4	115.7
Total % Inflation	4	7.6	10.9	14.2	17.6	21.2	24.8	18.5	32.4	36.4

- Adjust Rate Structure to Improve Equity and Encourage Conservation
  - Moving from 70/30 to 50/50 fixed/uniform volumetric rate structure
  - Phased in over four years
- Customer assistance program funded at $10 million per year

Monthly Rates in $

50% Fixed, 50% Uniform Volumetric – Phased in Over 4 Years

Rate Structure	Monthly Rate	Current (2024)	July 1, 2025	July 1, 2026	July 1, 2027	July 1, 2028	July 1, 2029	July 1, 2030	July 1, 2031	July 1, 2032	July 1, 2033	July 1, 2034
Single-Family	Fixed	77.55	77.83	77.52	76.53	74.74	81.47	88.80	95.90	102.62	108.77	114.21
	Uniform Volumetric (per 1,000 gal)	4.63	6.14	7.89	9.90	12.21	13.31	14.50	15.67	16.76	17.77	18.66
Multi-Family	Fixed (per dwelling unit)	53.32	53.51	53.30	52.62	51.39	56.01	61.05	65.94	70.55	74.79	78.53
	Uniform Volumetric (per 1,000 gal)	4.63	6.14	7.89	9.90	12.21	13.31	14.50	15.67	16.76	17.77	18.66
Non-Residentia	Fixed (per ESDU*)	77.55	77.83	77.52	76.53	74.74	81.47	88.80	95.90	102.62	108.77	114.21
	Uniform Volumetric (per 1,000 gal)	4.63	6.14	7.89	9.90	12.21	13.31	14.50	15.67	16.76	17.77	18.66

*ESDU: Equivalent Single-Family Dwelling Unit

Comparing
Single-Famil

July 1st of	Fixed Rate	Volumetric Rate	Water							
			2,000	4,000	6,000	8,000	9,000	0	25,000	30,000
2024	77.55	4.63	84.96	92.37	99.77	107.18	110.89	3	170.15	188.67
2025	77.83	6.14	87.65	97.48	107.30	117.13	122.04	7	200.63	225.19
2026	77.52	7.89	90.14	102.77	115.39	128.02	134.33	6	235.32	266.88
2027	76.53	9.90	92.37	108.21	124.05	139.89	147.81	3	274.53	314.13
2028	74.74	12.21	94.28	113.81	133.35	152.88	162.65	0	318.94	367.78
2029	81.47	13.31	102.77	124.06	145.36	166.65	177.30	3	347.67	400.91
2030	88.80	14.50	112.00	135.20	158.40	181.60	193.20	0	378.80	436.80
2031	95.90	15.67	120.97	146.04	171.12	196.19	208.72	2	409.30	471.98
2032	102.62	16.76	129.44	156.25	183.07	209.88	223.29	8	437.82	504.86
2033	108.77	17.77	137.20	165.63	194.07	222.50	236.71	9	464.17	535.25
2034	114.21	18.66	144.07	173.92	203.78	233.63	248.56	7	487.41	562.05
Compounded Increase (% over 10 years)			70	88	104	118	124		186	198

July 1st of	30,000
2024	188.67
2025	225.19
2026	266.88
2027	314.13
2028	367.78
2029	400.91
2030	436.80
2031	471.98
2032	504.86
2033	535.25
2034	562.05
Compounded Increase (% over 10 years)	198

Customer Assistance for Residential Environmental Services (CARES) Proposal

- Modeled after RURP program
- Funded at $10 million dollars per year
- Income-based qualification potentially administered through 3rd party non-profit
  - Eligibility = household income less than 80% of area median income (AMI)
- Eligible customers may qualify for a $20 to $25 credit on their monthly fixed charge
- Application required to enroll and to re-apply remain enrolled in program

Rate Increases – Start to Finish

Rate Packages	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Bill 60 proposal	9.0	9.0	9.0	9.0	9.0	9.0	8.0	7.0	6.0	5.0
6% Option - CD2	6.0	7.5	8.5	9.0	9.0	9.0	9.0	8.0	7.5	7.0
Bill 60 PASSED	6.0	7.5	8.5	9.0	9.0	9.0	9.0	3.0	3.0	3.0
Cumulative % Increase	*6.0*	*14.0*	*23.6*	*34.8*	*46.9*	*60.1*	*74.5*	*79.8*	*85.2*	*90.7*

Public/Council Engagement – Lessons Learned

- Extensive public outreach and engagement was practiced
- Public understands the need for sewer infrastructure
- People want to know how to save
  - conservation, sub-metering, gray-water reuse
- Equity and affordability issues are key to Council
  - Cost of living is main issue for Council
  - Fee structure change (73/27 to 40/60)
  - CARES customer assistance program
  - Integrated Planning needed

Affordability Issues

- High cost of living in Honolulu
  - Ranked #2 (NYC, HNL, SFO, Seattle, San Jose, Boston, San Diego, LA)
  - Aloha United Way ALICE reports (37%), Hawaii Foodbank (4.6Mlb, 25% incr, 28% FI), Out-migration
  - Rent close to national avg, Ownership +200%, Groceries +31%, Utilities +93%, Trans +36%, healthcare +16% Goods/Svcs +28%, Overall +86%
  - Simple argument, sensitive issue
- Affordability & Equity – address directly vs. all (or BOTH)
- Looked at Customer Assistance Programs (for those in need)
  - Senior credit, low-income credit, job-loss, debt forgiveness, voluntary assistance, referrals, payment programs (12-24 mo),
- Looked at fee structure modification (for all)

"USE LESS, PAY LESS"

Community. Commitment. Continuity.

SEWER BILL

BASE RATE + VOLUMETRIC RATE – 20% IRRIGATION CREDIT = YOUR BILL

OVERALL RATES ARE GOING TO INCREASE, BUT HOW MUCH DEPENDS ON YOUR USE

BASE RATE IS GOING TO DECREASE (73% TO 40%)

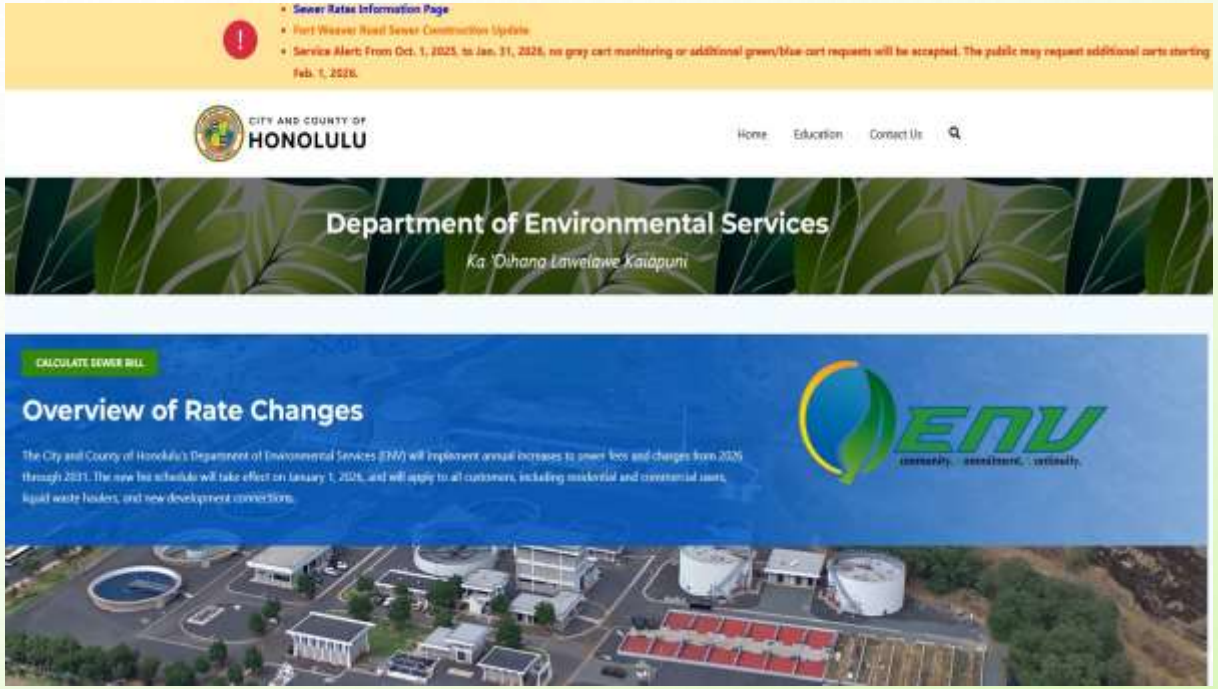
VOLUMETRIC RATE IS GOING TO INCREASE (27% TO 60%)

YOU ARE IN CONTROL

"use less, pay less, & save more"

Monthly Water Usage (Residential Single Family)		6,000 Gallons (6KGal)	4,000 Gallons *(decrease 2,000 gallons a month)*
Current	Base	$77.55	*$77.55*
	Volumetric	$23.15	*$13.89*
	Total	**$100.70**	**$91.44 (saving $9.26 each month)**
January 1, 2026	Base	$63.55	*$63.55*
	Volumetric	$39.75	*$23.85*
	Total	**$103.30**	**$87.40 (saving $15.90 each month)**
July 1, 2026	Base	$48.27	*$48.27*
	Volumetric	$59.15	*$35.49*
	Total	**$107.42**	**$83.76 (saving $23.66 each month)**

-Go to Honolulu.gov/env
-click on ‘Sewer Rates Information Page’
-scroll down to use new online bill estimator



"USE LESS, PAY LESS"

"USE LESS, PAY LESS"

"use less, pay less, & save more"

More Water Saving Tips

- Turn off water while brushing teeth/doing dishes
- Run full loads of laundry and full loads of dishes
- Fix leaky toilets and sinks
  - 10% of homes have leaks that waste 90 gallons or more per day!
- Replace old fixtures and appliances with water-saving models (and get rebates: which are going to increase)
- Use rain barrel/graywater to irrigate your yard
- Have a free Water Audit performed on your whole home

CARES

Customer Assistance for Residential Environmental Services Program

- Being developed
- Qualified residents can receive $20 discount on base rate monthly
- Goal to provide CARES by July 2026

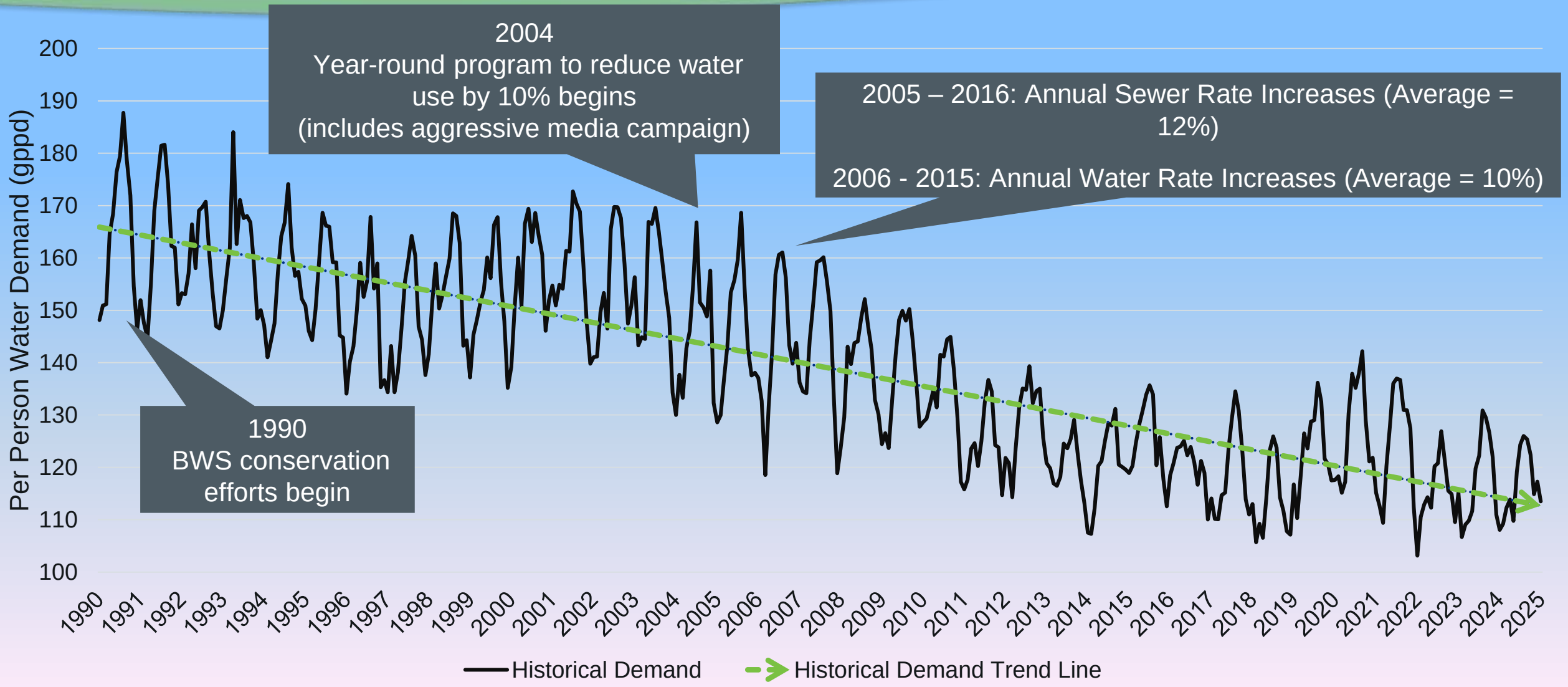
Price Elasticity of Water Indicates how Price Influences Customers' Water Use

Measures the percentage change in the quantity demanded resulting from a 1 percent change in the price

Water Demand Across the United States is Relatively Inelastic

Location / Study	Elasticity Estimate Value	Sector / Notes	Source / Year
United States (average, 64 studies)	-0.41	Residential	Dalhuisen et al., 2003
Reno, NV	-0.20	Residential/Commercial	Bowman et al., 2018 (this paper)
Las Vegas, NV	-0.34	Single-family	Rollins, Lott, & Tchigriaeva, 2014; LVVWD, 2016
Las Vegas, NV	-0.51	Composite	Rollins, Lott, & Tchigriaeva, 2014; LVVWD, 2016
Santa Cruz, CA	-0.12	Households	Nataraj & Hanemann, 2011
Urban US & Canada	-0.36	Urban households	Mansur & Olmstead, 2012
Phoenix, AZ	-0.66	Urban households	Yoo et al., 2014
Southern California	-0.76	Urban households	Baerenklau et al., 2014

BWS Water Demands Have Been on a Downward Trend

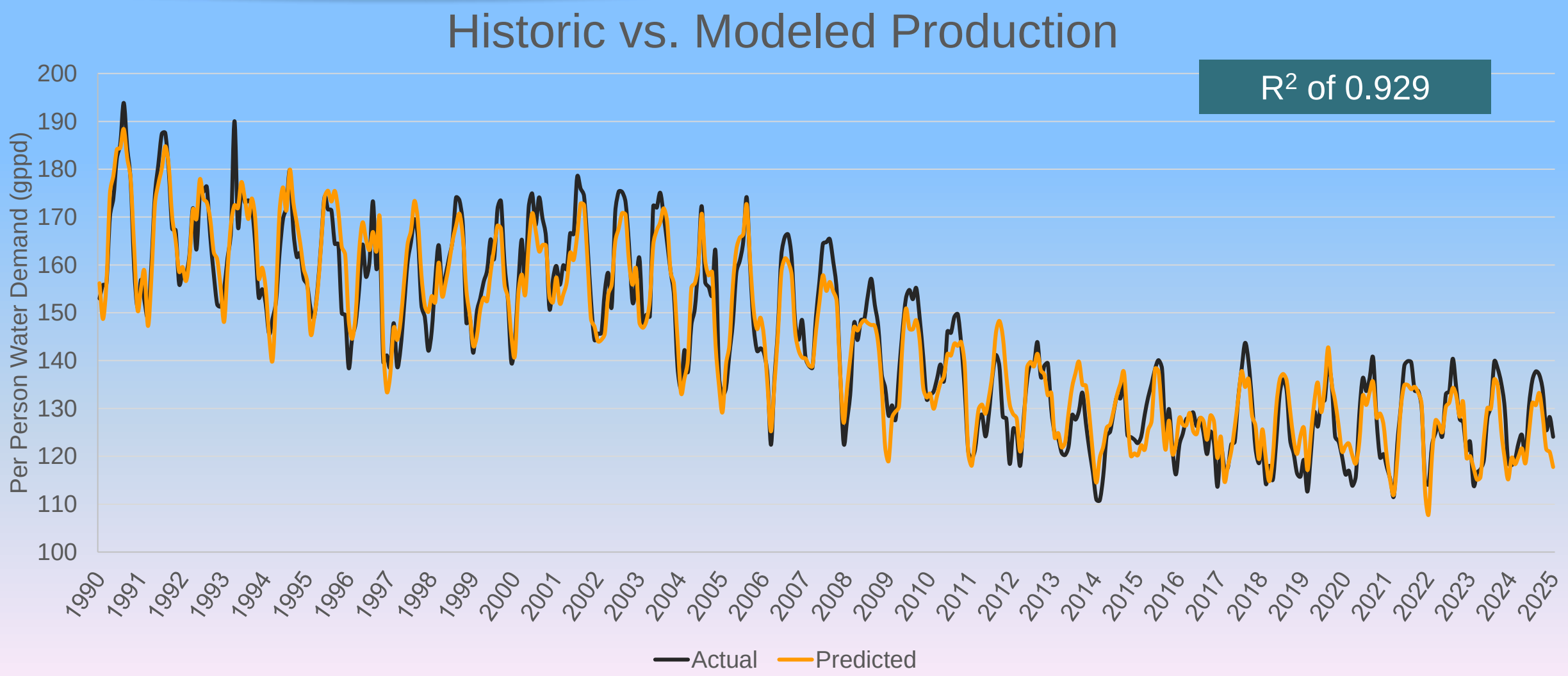


Examples of Variables Explored in Model

- **Max monthly temperature**
- Number of days hotter than 90 degrees
- **Monthly precipitation**
- **Previous month's precipitation**
- **Max consecutive days in month with zero precipitation**
- Visitor arrivals
- **Unemployment rate**
- Economic recession indicator (unemployment > ~6%)
- Per capita income
- **Price of water/9,000 gal**
- BWS conservation spending
- Plumbing efficiency
- **Non-revenue water**
- Amount of nonpotable water

Most impactful variables in **yellow**

Water Demand Model Captures Long-term And Seasonal Variability



How Much Does Each Variable Matter?

Variable	Coefficient
Consecutive Days with No Rain	0.02
Monthly Average Daily Max Temperature	1.05
Total Monthly Precipitation	-0.03
Previous Month's Total Precipitation	-0.03
Unemployment Rate	-0.02
Average Price of Water (Volumetric bill, per 9kgal)	-0.18
Nonrevenue Water (Percent Loss)	0.14

- The coefficient tells us how much water demand would change if a variable was increased by 1%

Price is not (Yet?) a Significant Influencer of Water Use Behavior for Most Customers

Variable	Coefficient
Consecutive Days with No Rain	0.02
Monthly Average Daily Max Temperature	1.05
Total Monthly Precipitation	-0.03
Previous Month's Total Precipitation	-0.03
Unemployment Rate	-0.02
Average Price of Water (Volumetric bill, per 9kgal)	-0.18
Nonrevenue Water (Percent Loss)	0.14

- The coefficient tells us how much water demand would change if a variable was increased by 1%
- When the **average price of water** increases by 1%, the demand ***decreases*** by 0.18%

Why is Water Demand Price Inelastic?

Water Demand is "Hardened"

Customers are already conserving all that they can

Still Below Elasticity Threshold

Price of water not yet high enough to influence customer behavior

Thoughts for Further Consideration

- How do price elasticities on Oahu vary by income lot, size, planning district, season, drought?
- How will changes to ENV sewer fees affect price elasticity?
- How will separation of the water and sewer bill affect price elasticity?
- What additional water conservation incentives would be effective at reducing water demand?
- What are the implications of these findings for future policy and rate making considerations, including affordability programs?

Mahalo!