



February 1, 2024

Community Advisory Panel





February 1, 2024

Inflation Response Plan



Agenda for Today

- Inflation Response Plan (IRP)
 - Inflationary impacts
 - Century II
- IRP funding recommendations
- Panel comments



But First...

- KUB Blueprint
- Utility systems
- Century II



Our **Vision**

KUB creates connections and enhances the quality of life in our East Tennessee communities so everyone can thrive.

Our **Mission**

KUB exists to serve its customers as a trusted partner and steward, providing industry-leading energy, water and fiber optic services.

We **Value**

Our **Customers**

- Our services are safe, reliable and affordable
- We are committed to great customer service
- Our decisions consider everyone's needs

Our **Community**

- We are committed to a cleaner environment
- We are personally invested in our community
- We help our region grow

Our **Co-workers**

- We put safety first and take care of each other
- We take pride in our hard work and expertise
- We invest in our people

Our **Culture**

- We always do our best, and strive for better every day
- We hold ourselves to high ethical standards
- We value diversity, equity, inclusion and belonging for all.

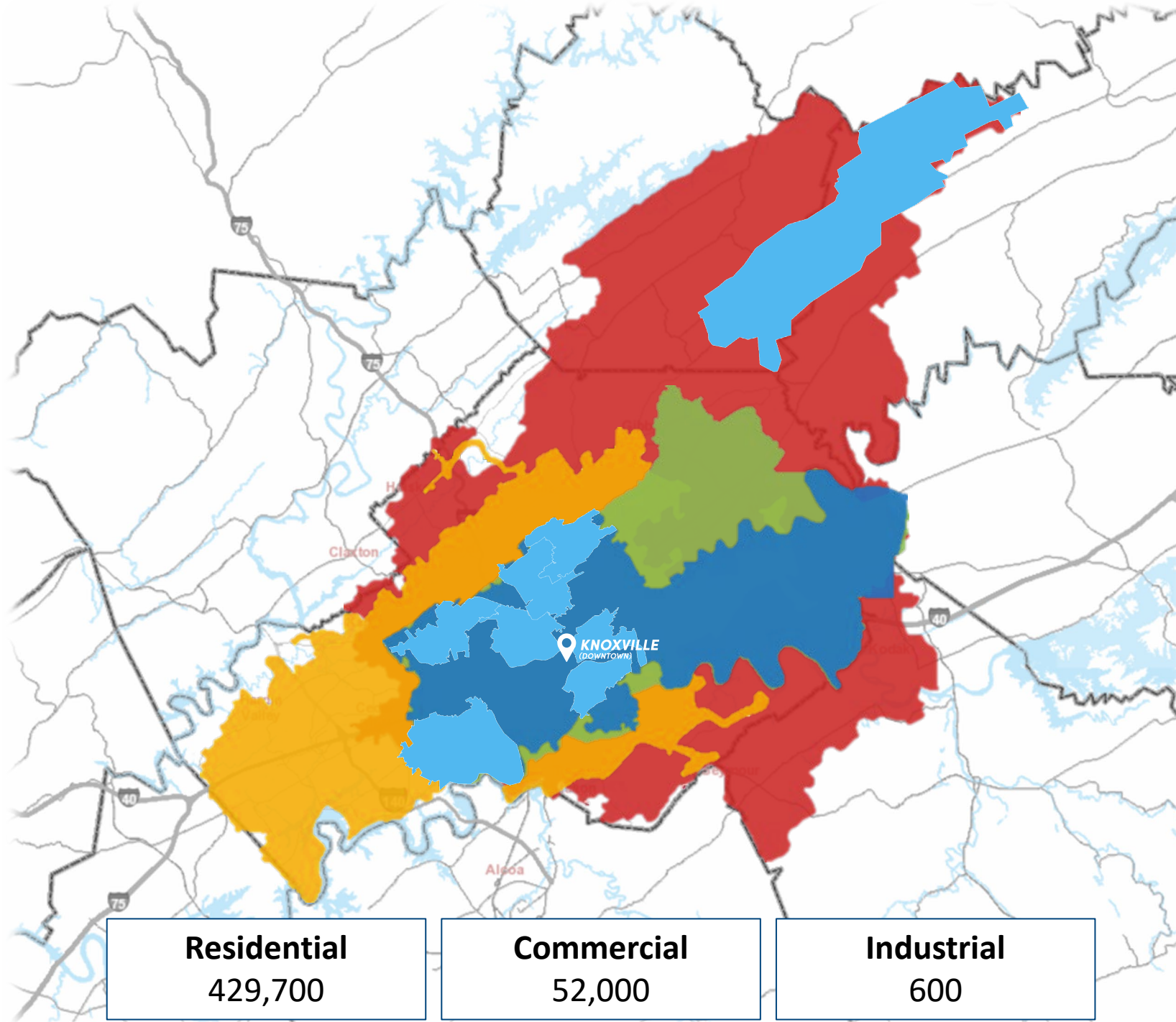
KUB
ELECTRIC

KUB
NATURAL GAS

KUB
WASTEWATER

KUB
WATER

KUB
FIBER



Residential
429,700

Commercial
52,000

Industrial
600

\$4.19 / day
218,344 customers
Seven counties
63 substations
5,490 miles

\$2.13 / day
108,698 customers
Three counties
46 stations
2,570 miles

\$2.24 / day
74,041 customers
One county
4 plants, 74 stations
1,336 miles

\$0.99 / day
82,799 customers
Three counties
1 plant, 26 stations
1,412 miles

\$65 / month
>6,400 customers
1,400 miles of fiber
8 central offices
2 data centers

Century II – KUB's Second Century of Utility Investments

- Comprehensive utility asset and infrastructure lifecycle management program
- Steady, incremental, data-driven
- Balances safety, reliability, sustainability, affordability
- Pace of work has slowed
 - Rate increases deferred during the Pandemic
 - Compounded inflationary impacts
 - Supply chain challenges



CENTURY II

Inflation Response Plan (IRP)

- Last budget did not include long-range financial plan
- Uncertainties and organizational challenges:
 - Increased reliability expectations
 - Increasing technology needs
 - Electricity market changes
 - Regulatory unknowns in all divisions
 - Challenging labor market
 - Cost saving measures depleted
 - **Biggest issue: systems continue to age**
- Comprehensive evaluation of all programs
 - Cross-functional teams
 - Reviewed operations and capital budget
 - Assessed long-term funding strategies
 - Pursued federal, state, and local funding opportunities
- Board workshop held in November
 - Inflationary impacts
 - Century II recommendations
 - Funding options (FY23 – 30 basis)
- Follow up presentation to Board in January

Electric

Focus on Safety, Reliability

Customers: 218,344

Service Territory:
688 square miles

Electric Lines: 5,519 miles

Distribution Overhead: 4,083 miles

Distribution Underground: 1,170 miles

Transmission: 266 miles

Infeed Substations: 10

Substations: 64

System Capacity: 3,360 MW

Peak Hourly Demands:

Winter: 1,350 MW (Jan. 2024)

Summer: 1,235 MW (Aug. 2007)



County Lines



City Limits



Service Area



Existing Lines

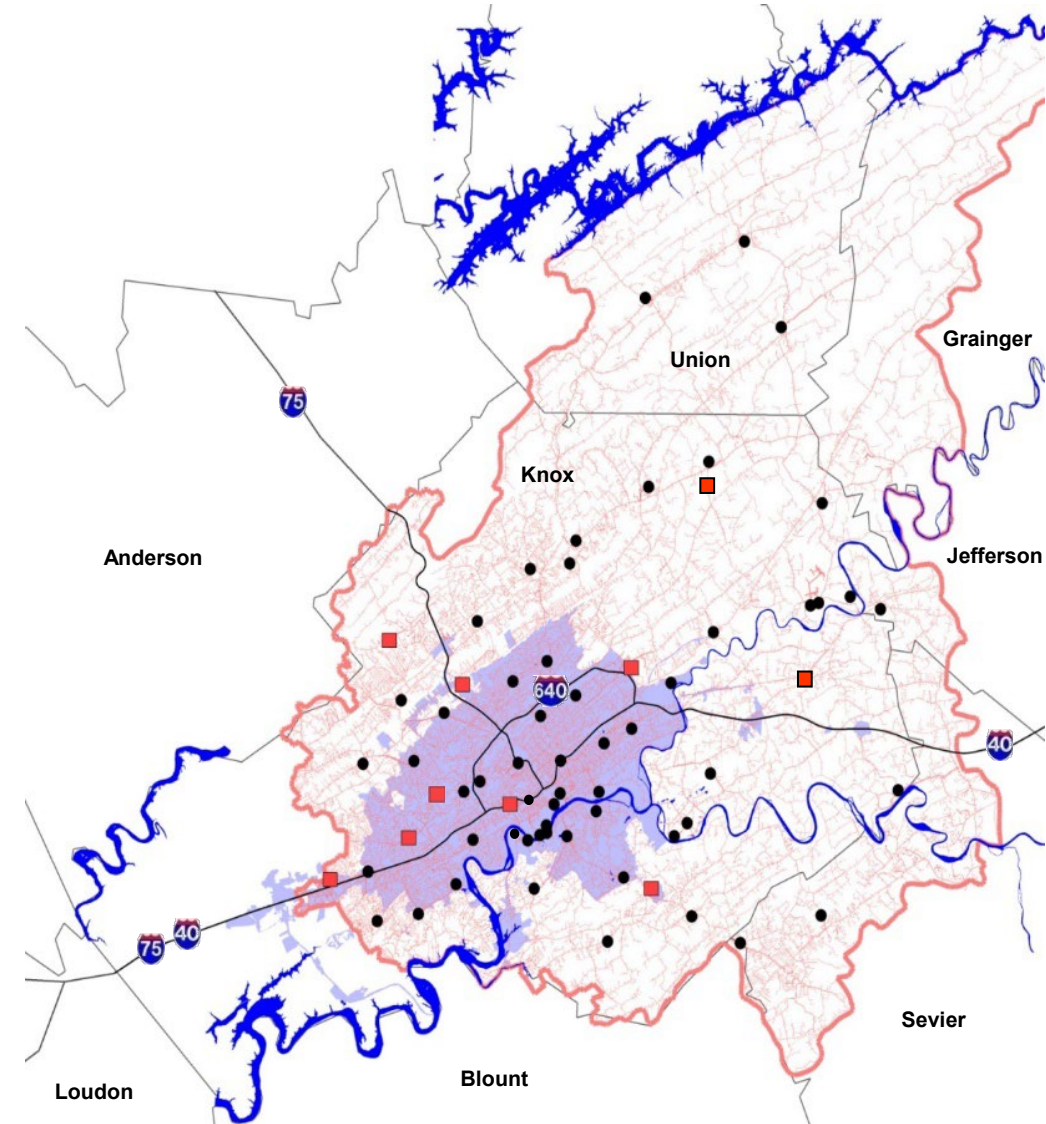


Infeed Stations



Distribution

Stations



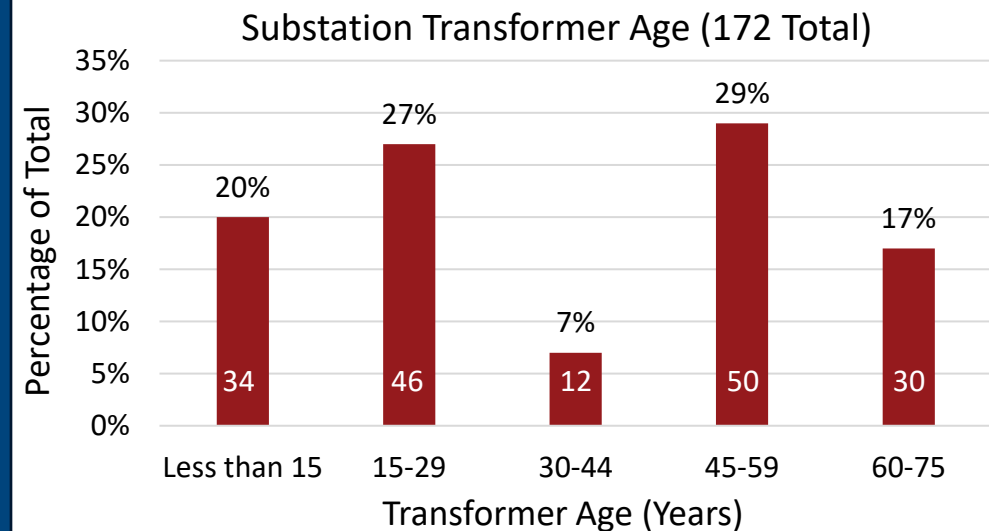
\$110M Electric System Inflationary Impact

Material	FY20 Average Price	Current FY24 Price	Percent Change	Annual Spend
50' Ductile Iron Pole	\$1,531	\$3,261	113%	\$316K
45' Wood Pole	\$243	\$378	56%	\$275K
25 kVA Pad Transformer	\$1,329	\$2,355	77%	\$252K
25 kVA Pole Transformer	\$760	\$1,447	90%	\$123K
795AA Wire	\$1.91/lb	\$3.94/lb	106%	\$1.15M
Underground Cable	\$2.43/ft	\$5.10/ft	109%	\$1.28M



\$133M Needed for Electric Century II

- Substation transformer fleet aging
- Transmission and distribution infrastructure pace slowed
- Reliability expectations and requirements increasing
- Inflation Response Plan (IRP) recommends accelerating:
 - Substation transformer replacement (\$3M/yr)
 - Transmission infrastructure (\$2M/yr)
 - Overhead wire capacity improvements (\$1.3M/yr)
 - Pole replacement (\$4.3M/yr)
 - Underground cable replacement (\$1.1M/yr)
 - Grid modernization (\$3.6M/yr)



Natural Gas

Focus on Safety, Environment, Growth

Services: 108,698

Service Territory:
297 square miles

Mains: 2,574 miles
Distribution

Steel: 137 miles

Plastic: 2,365 miles

Higher pressure

Steel: 66 miles

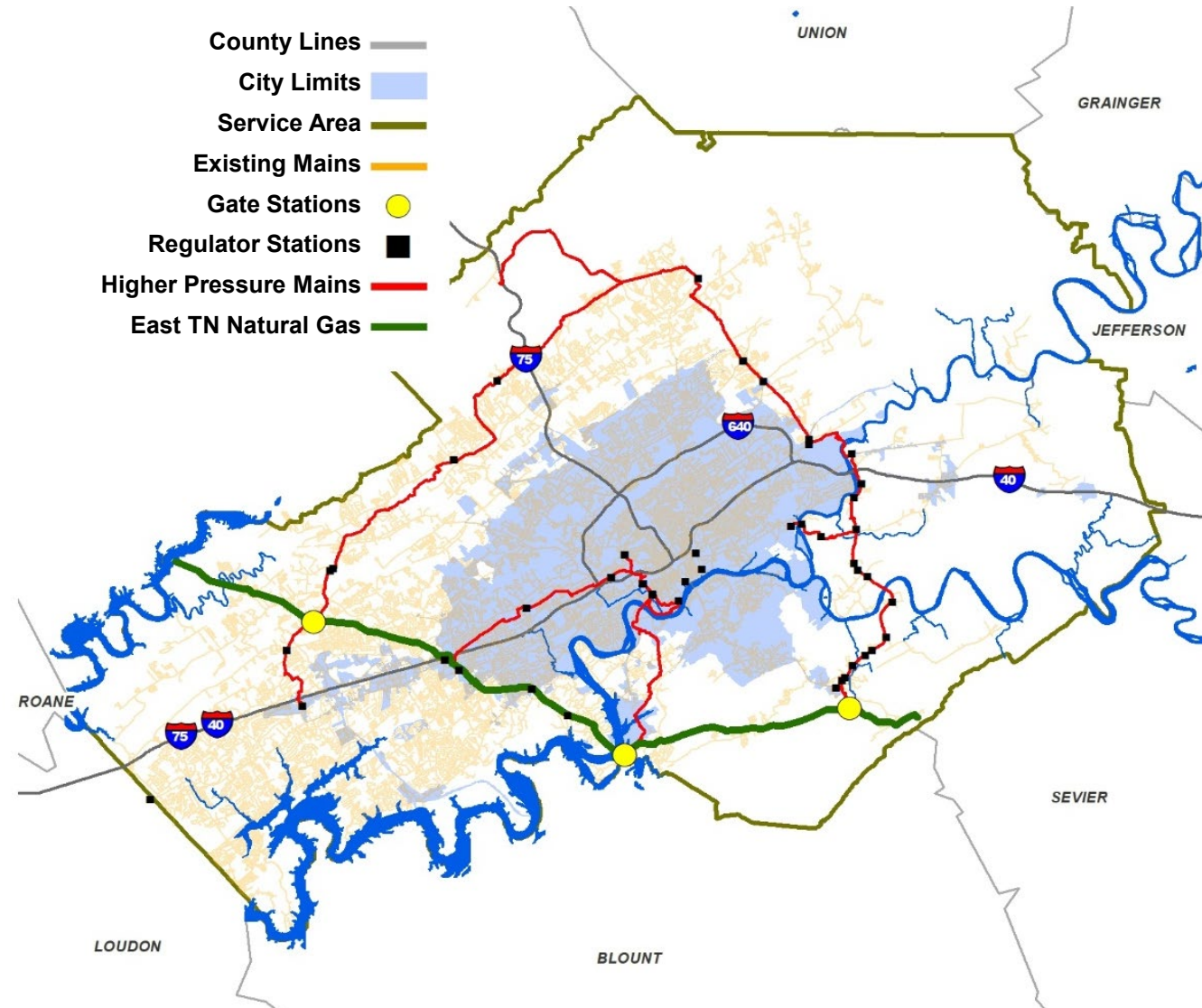
Plastic: 6 miles

Gate Stations: 3

Regulator Stations: 43

System Capacity: 157,381 dth

Peak Demand: 169,458 dth (Dec. 23, 2022)



\$42M Natural Gas System Inflationary Impact

Material	FY20 Average Price	Current FY24 Price	Percent Change	Annual Spend
2" Pipe	\$0.84	\$1.33/ft	58%	\$52K
4" Pipe	\$3.14/ft	\$4.68/ft	49%	\$42K
Meter Riser	\$24.60	\$46.67	90%	\$27K
Residential Gas Meter	\$76.10	\$171	125%	\$462K



\$39M Needed for Natural Gas Century II

- Gate station work adds energy supply resiliency
- System extensions loop system for operational flexibility and system contingency
- Inflation Response Plan (IRP) identified:
 - Continued gate station improvements (\$6M)
 - Proactive methane capture and enhanced leak detection (\$50K/yr)
 - Additional right-of-way maintenance (\$100K/yr)
 - Conversion to Sonix metering (\$20M)



Water

Focus on Quality, System Resiliency



Customers: 82,799

Service Territory:
188 square miles

Treatment Plant: 1

Pump Stations: 26

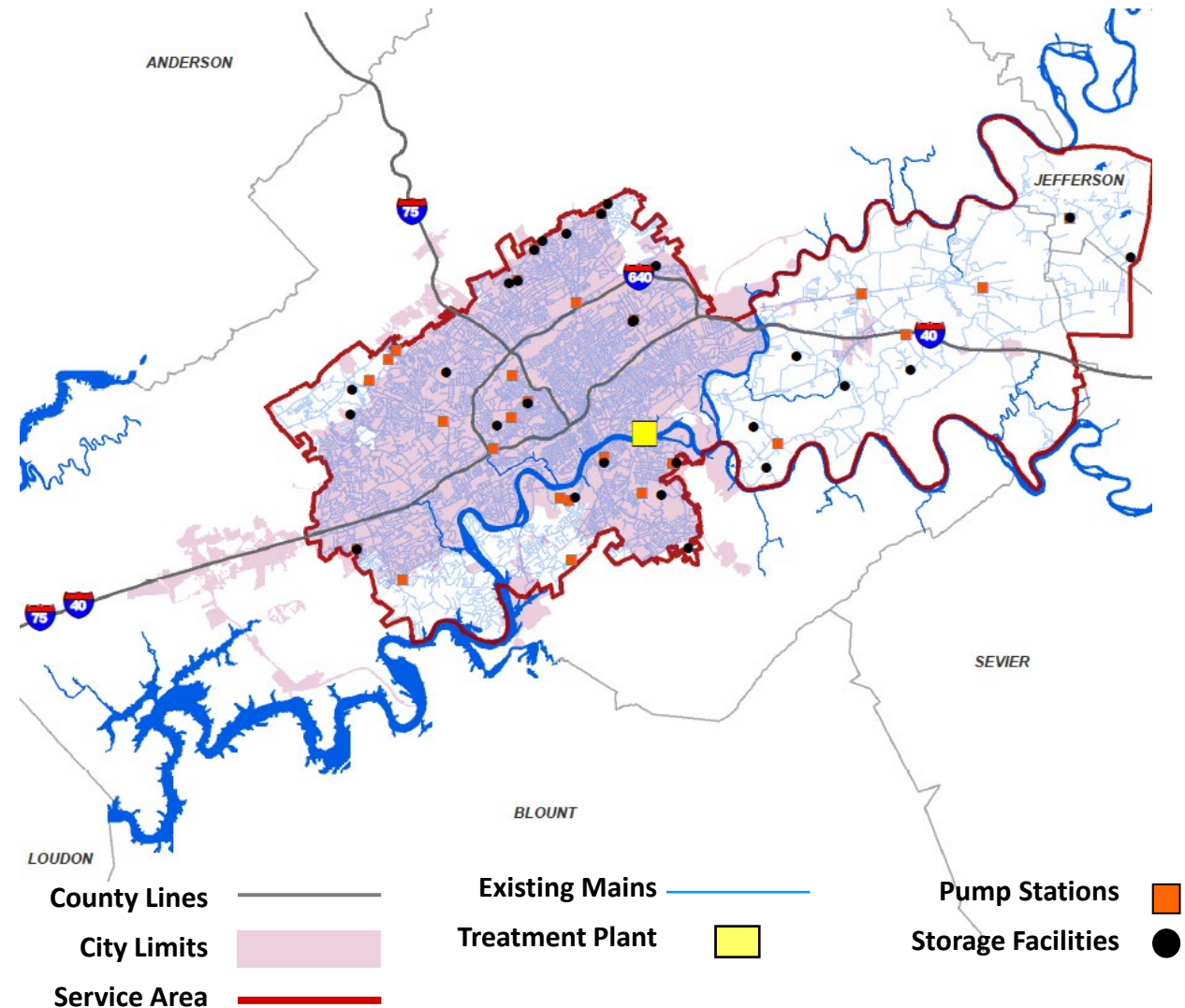
Storage Facilities: 28

Distribution Mains: 1,412 miles

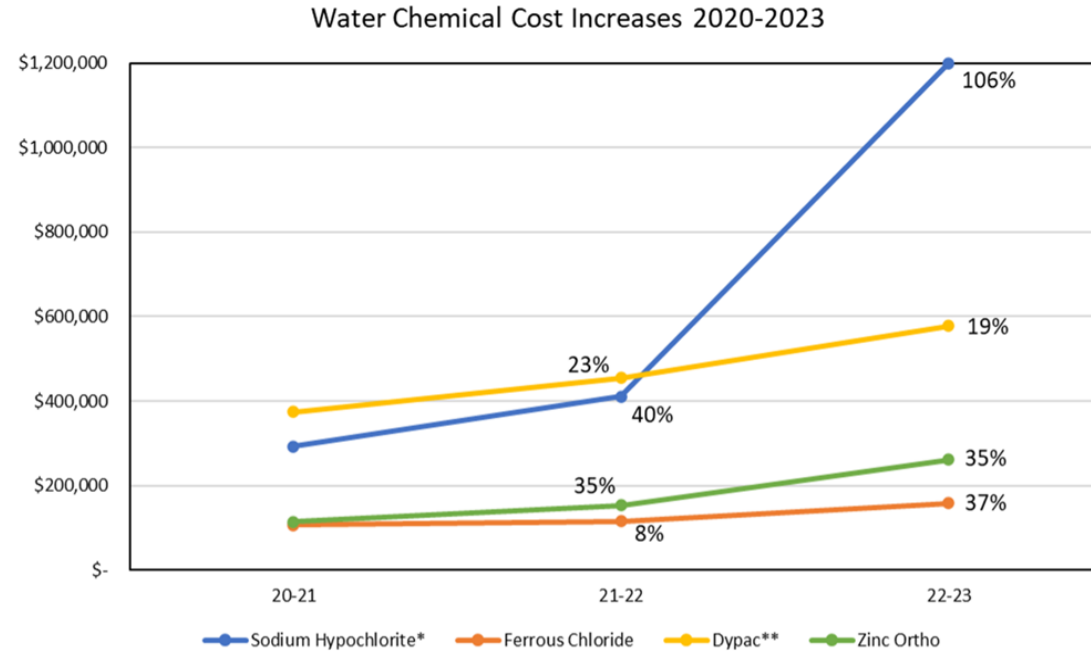
Plant Capacity:
62.9 million gallons/day (MGD)

Reservoir Capacity: 36.9 million gallons (MG)

Treated Water: 12.7 billion gallons annually



\$54M Water System Inflationary Impact



Material	FY20 Average Price	Current FY24 Price	Percent Change	Annual Spend
8" Ductile Iron Pipe	\$17.65/ft	\$31.37/ft	78%	\$372K
12" Ductile Iron Pipe	\$25.37/ft	\$47.59/ft	88%	\$90K
8" Valve	\$714	\$1,440	102%	\$78K
Contractor Cost/ft	\$155	\$200	30%	---

\$14M Needed for Water Century II

- Water System Master Plan developed long-range strategy
 - Water plant resiliency projects
 - Tanks and pump stations prioritized by data
 - District metering technology
 - Distribution system operational flexibility
- Pipe replacement slowed
- Inflation Response Plan (IRP) identified:
 - Increased pipe replacement (\$2M/yr)
 - Accelerates replacement (9.7 to 12 miles/yr)



Wastewater

Focus on Environment, System Resiliency

Customers: 74,041

Service Territory:
249 square miles

Treatment Plants: 4

Lift Stations: 74

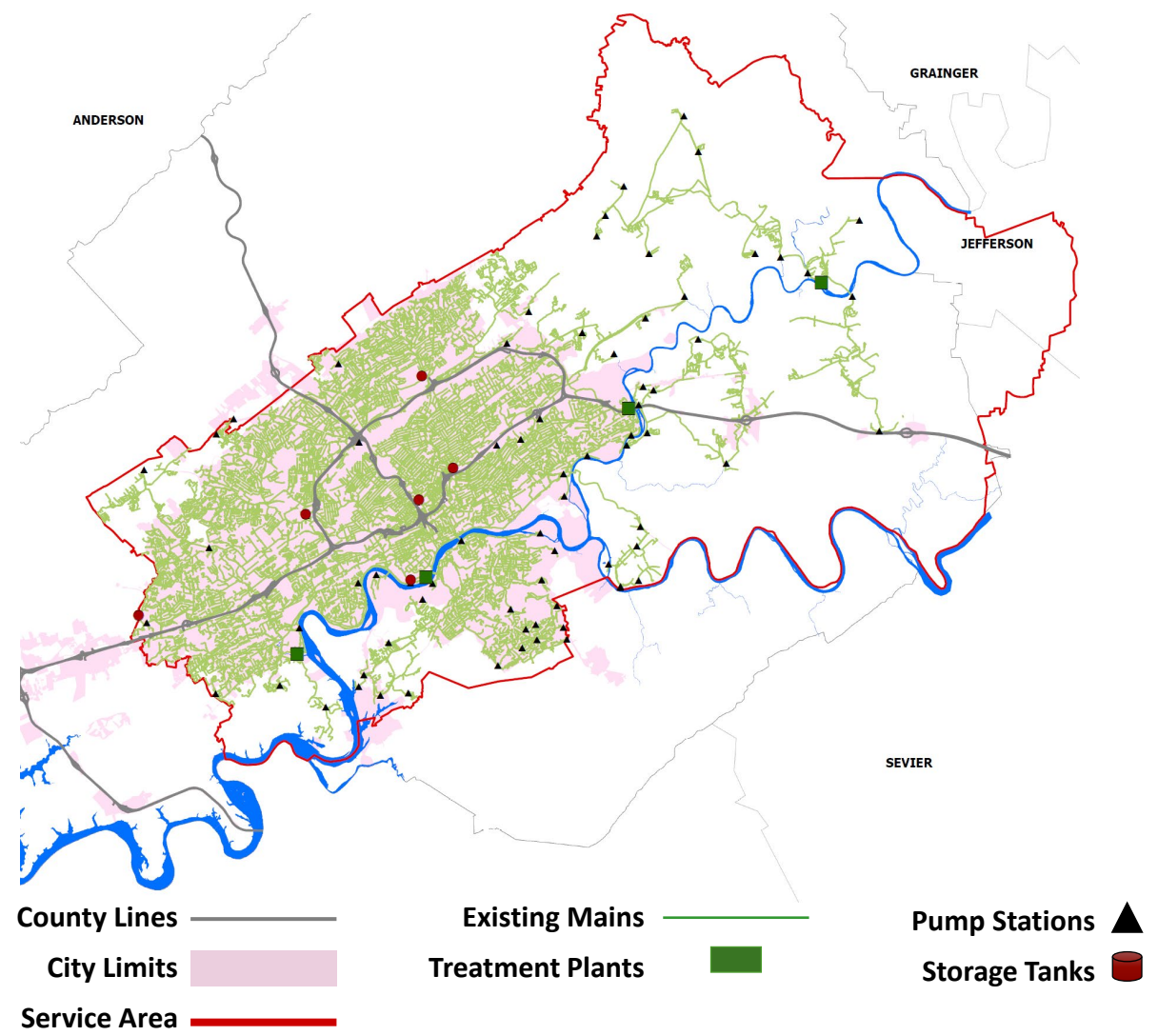
Collection Mains: 1,336 miles

Storage Capacity: 34 MG in 6 tanks

Plant Maximum Capacity: 173 MGD

Average Flow: 36.33 MGD

Consent Decree: 2005 – 2022



County Lines ———
City Limits ■■■
Service Area ———

Existing Mains ———
Treatment Plants ■■■

Pump Stations ▲
Storage Tanks ■■■

\$70M Wastewater System Inflationary Impact

Holston Hills Pump Station project costs increased by 21% or \$0.84 million

Material	FY20 Average Price	Current FY24 Price	Percent Change	Annual Spend
6" PVC Pipe	\$2.33/ft	\$7.25/ft	211%	\$57K
8" PVC Pipe	\$5.60/ft	\$13.11/ft	134%	\$80K
6" Cleanout Fitting	\$105	\$140	34%	\$48K
8" Saddle Fitting	\$101	\$140	39%	\$28K
8" Tee Fitting	\$49.10	\$105	114%	\$10K



\$23M Needed for Wastewater Century II

- Successfully closed EPA Consent Decree
 - \$650M investment
 - Final project completed in 2022
- Maintenance and compliance programs ongoing
- Monitor overflows and adjust rehabilitation and maintenance rates as needed
- Inflation Response Plan (IRP) identified:
 - Kuwahee WWTP facilities upgrades (\$10.4M)
 - Loves Creek (\$2M) on-site storage tank (\$2M)



Combined Impact of Inflation & Needed Century II Work (FY23-30)

	Inflation	Century II Renewal
Electric	\$110M	\$133M
Natural Gas	\$42M	\$31M
Water	\$54M	\$14M
Wastewater	\$70M	\$6M
Total	\$276M	\$184M
	Total Combined	\$460M



February 1, 2024

Inflation Response Plan - Funding



Financial Overview

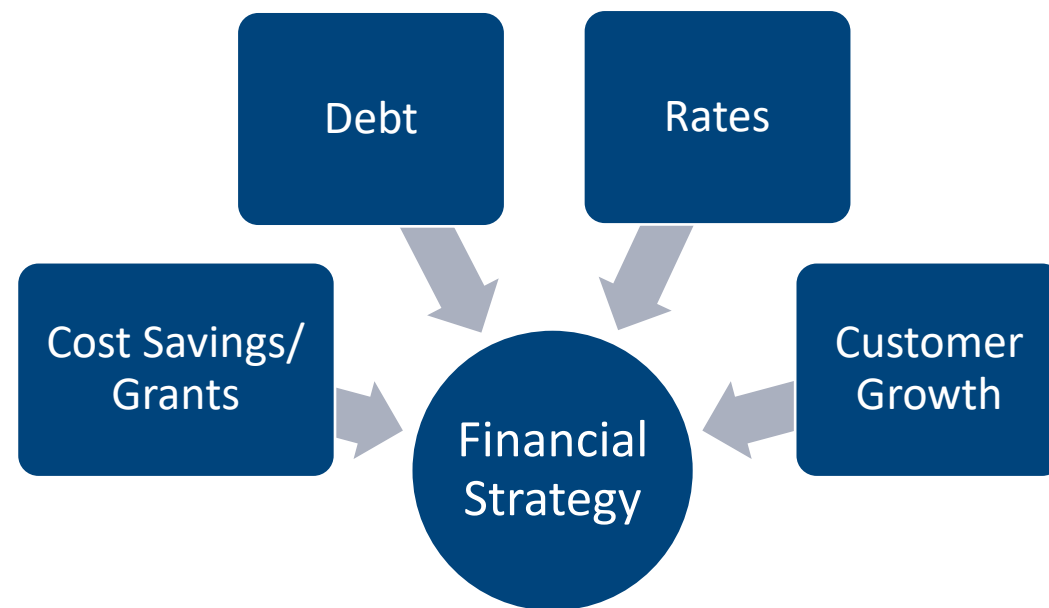
- KUB is a not-for-profit organization
- Utility systems financially independent
- Total annual budget \$1.2B
- 50% of budget is purchased energy
- Budget largely funded through system revenues (rates)
- Long-term bonds fund portion of annual capital budget
- Outstanding bonds - \$1.1B
- System bonds rated AA or higher

FY24 Budget: \$1.2 Billion

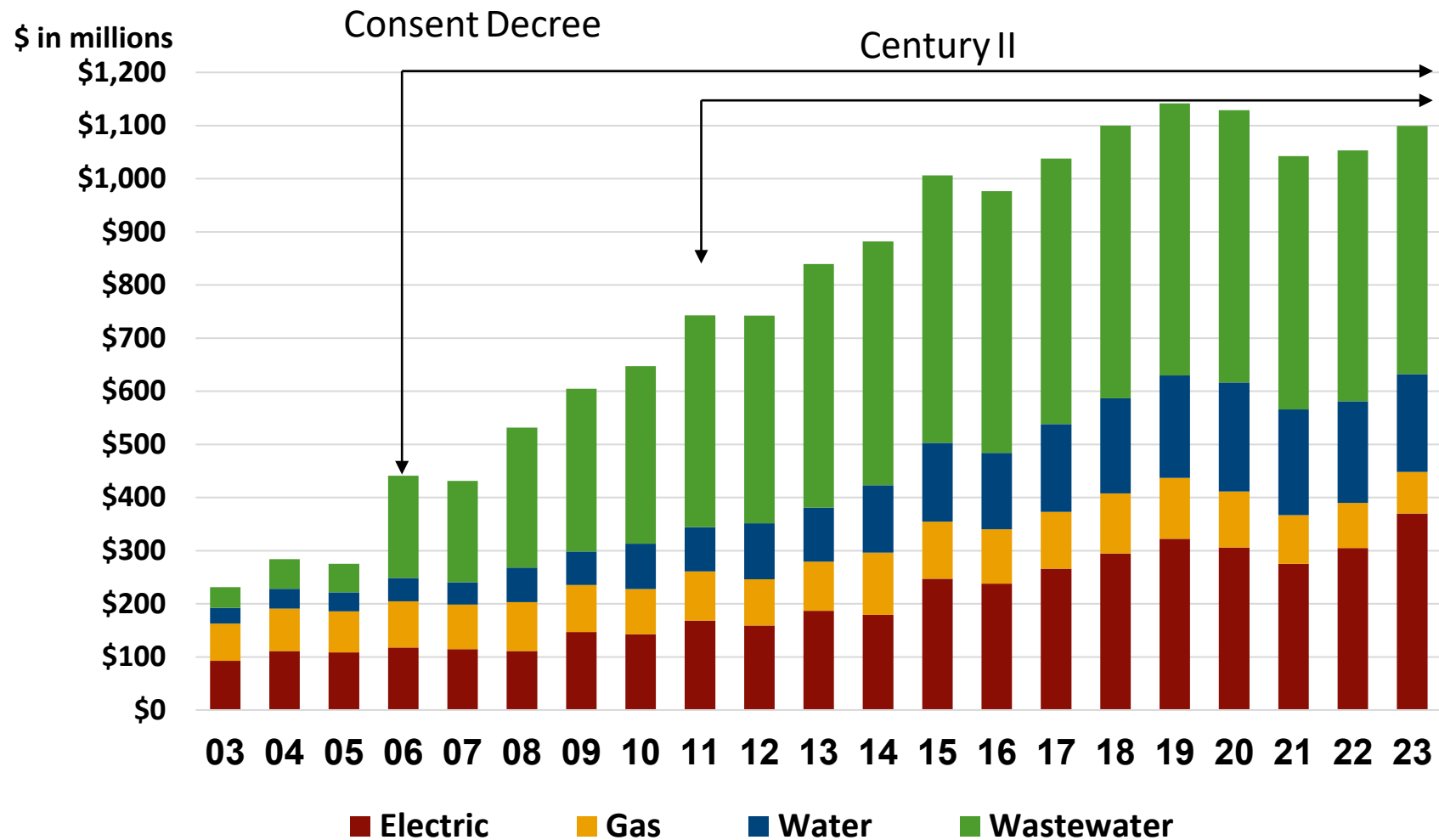
	Electric	Gas	Water	Wastewater	Fiber	Total
Energy Cost	\$470.4	\$ 78.0	\$ ---	\$ ---	\$ 6.0	\$ 554.4
O&M	\$ 86.3	\$ 27.6	\$ 36.0	\$ 44.6	\$18.9	\$ 213.4
Capital	\$150.4	\$ 28.7	\$ 55.2	\$ 47.5	\$ 1.7	\$ 283.5
Debt Service	\$ 33.9	\$ 9.6	\$ 14.7	\$ 33.5	\$ 3.0	\$ 94.7
Taxes and Equivalents	\$ 22.5	\$ 8.8	\$ 5.3	\$ 6.8	\$ 0.4	\$ 43.8
Loan to Fiber	\$ 9.0					\$ 9.0
\$ in Millions	\$772.5	\$152.7	\$111.2	\$132.4	\$30.0	\$1,198.8

Long-Term Financial Strategy

- Balanced funding approach
- Maintain competitive rates
- Financially sound utility systems
- Lower levels of outstanding debt over time
- Maintain high-quality bond ratings (AA or higher)



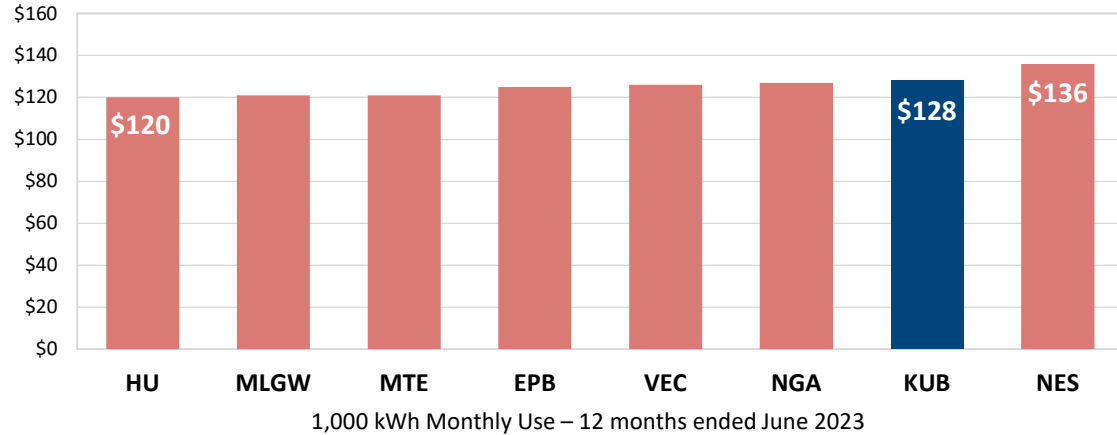
Debt Levels Have Risen to Support Investments in Infrastructure



Residential Rates Remain Competitive

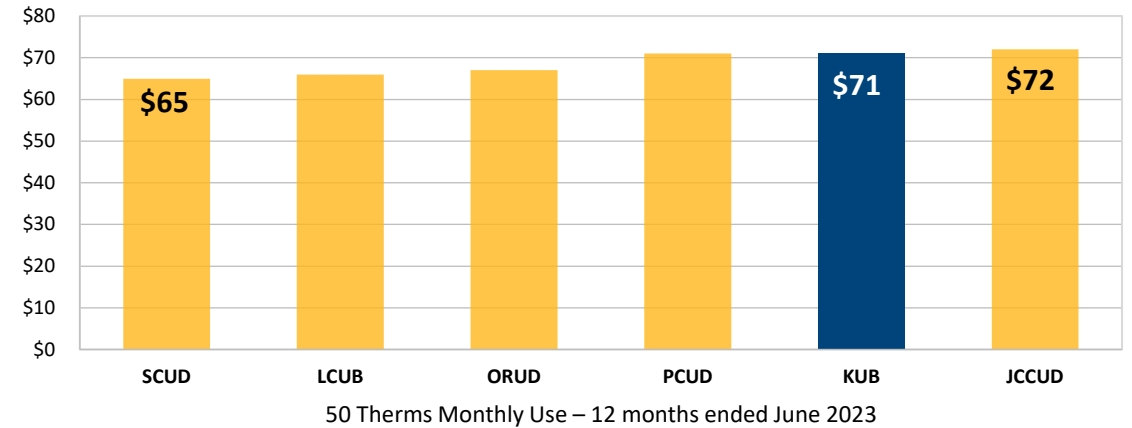
Electric Bill Comparison

("Big 8" TVA Distributors)



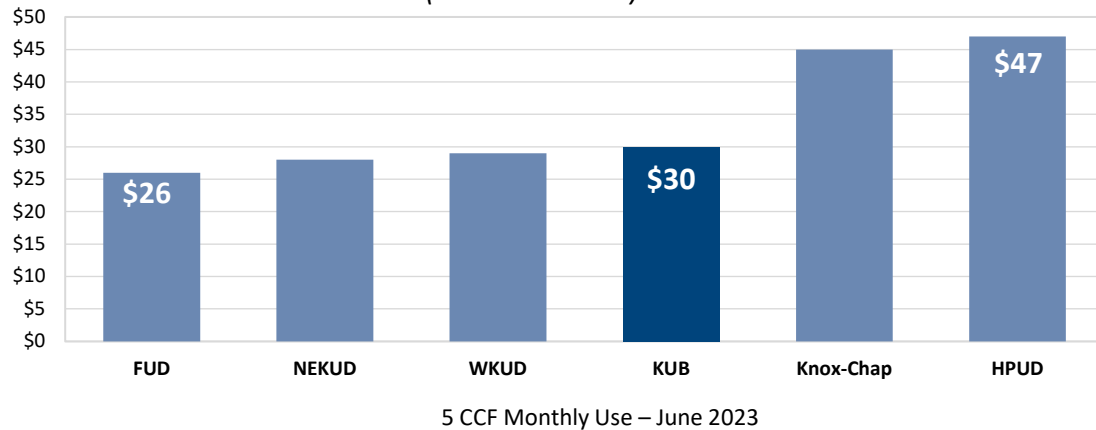
Gas Bill Comparison

(Regional Gas Distribution Companies)



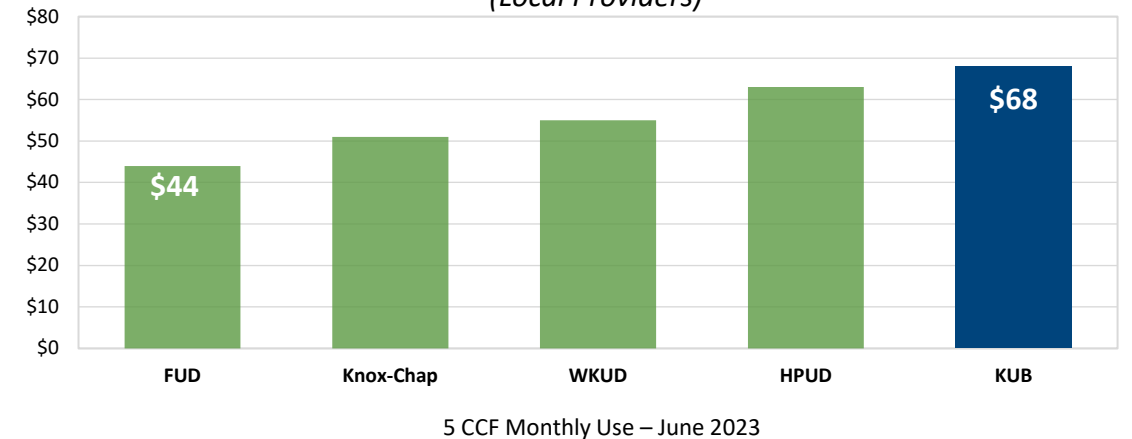
Water Bill Comparison

(Local Providers)



Wastewater Bill Comparison

(Local Providers)



Inflation Response Plan Summary

- Inflation has had a significant impact on KUB's systems
- Century II strategy continues to be the best way to provide reliable, affordable, and safe service
 - We've lost some ground over the last few years
 - As our systems age, more funding is needed to maintain a sustainable pace
- Available debt capacity is limited
- Rate increases are needed to fund cost increases
 - Water and wastewater are in line with prior plans
 - Electric and gas require larger shifts

Additional Funding Requirements (FY23 – FY30)

	Inflation	Century II Renewal
Electric	\$110M	\$133M
Natural Gas	\$42M	\$31M
Water	\$54M	\$14M
Wastewater	\$70M	\$6M
Total	\$276M	\$184M
	Total Combined	\$460M

Additional Funding Approach

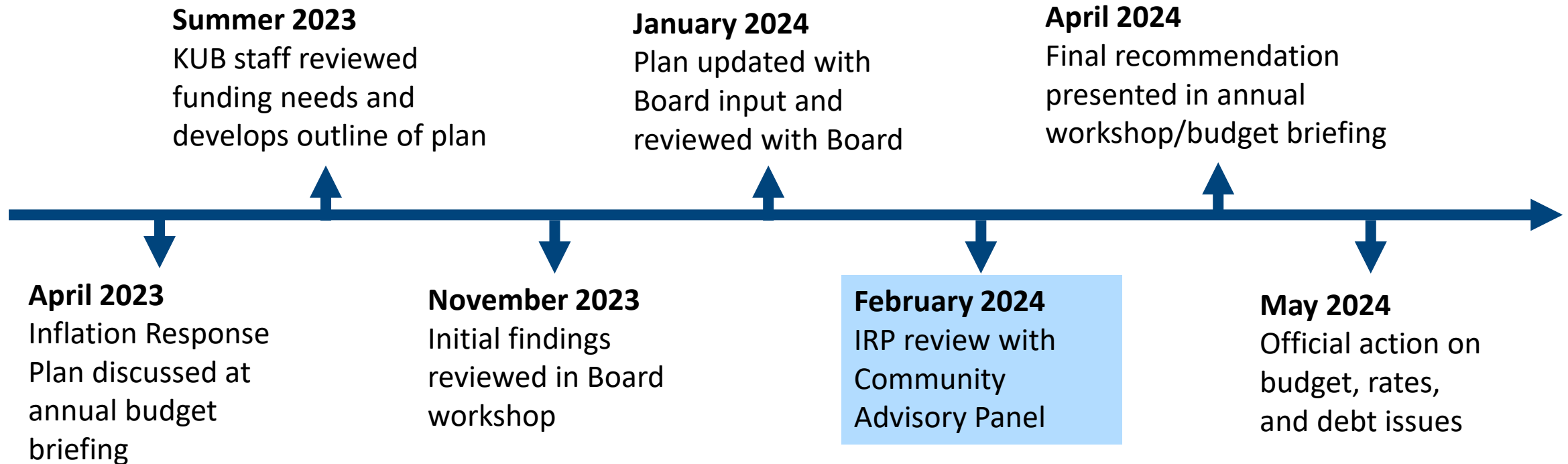
	Electric	Natural Gas	Water	Wastewater
Funding Needed	\$243M	\$73M	\$68M	\$76M
Bonds (Debt)	\$5M	\$17M	\$32M	\$7M
Grants	\$15M	---	\$5M	\$5M
Updated Revenues/Other	\$10M	\$10M	\$31M	\$64M
Adjusted Rate Increases	\$213M	\$46M	---	---
Total	\$243M	\$73M	\$68M	\$76M

Three-Year Potential Rate Actions

Rate Increases				
	FY25	FY26	FY27	FY28
Electric	4%	3%	1%	
Natural Gas	3%	3%	3%	
Water		6%	6%	6%
Wastewater		2%	2%	2%

Monthly Bill Impacts				
	FY25	FY26	FY27	FY28
Electric	\$5.00	\$3.85	\$1.35	
Natural Gas	\$2.15	\$2.20	\$2.25	
Water		\$2.00	\$2.10	\$2.20
Wastewater		\$1.45	\$1.50	\$1.55

Inflation Response Plan Timeline



KUUB

KNOXVILLE
UTILITIES BOARD