

KUB

2018

Annual Report



CONNECTING OUR COMMUNITY



KUB BOARD OF COMMISSIONERS:

Seated
JERRY W. ASKEW
 Vice Chair

■ **CELESTE HERBERT**
 Chair

Standing
JOHN WORDEN

• **SARA HEDSTROM PINNELL**

• **KATHY HAMILTON**

• **TYVI SMALL**

• **ADRIENNE SIMPSON-BROWN**

Management

Mintha Roach
 President and
 Chief Executive Officer

Mark Walker
 Senior Vice President and
 Chief Financial Officer

Susan Edwards
 Senior Vice President and
 Chief Administrative Officer

Gabriel Bolas
 Senior Vice President
 and Chief Engineer

Eddie Black
 Senior Vice President

Derwin Hagood
 Senior Vice President

Vice Presidents

Mike Bolin

Julie Childers

John Gresham

Dawn Mosteit

Paul Randolph

Dennis Upton

CONTENTS

CEO LETTER	2
OUTSTANDING PERFORMANCE	3
ELECTRIC SYSTEM	4
NATURAL GAS SYSTEM	6
WATER SYSTEM	8
WASTEWATER SYSTEM	10
ENVIRONMENT	12
COMMUNITY	13



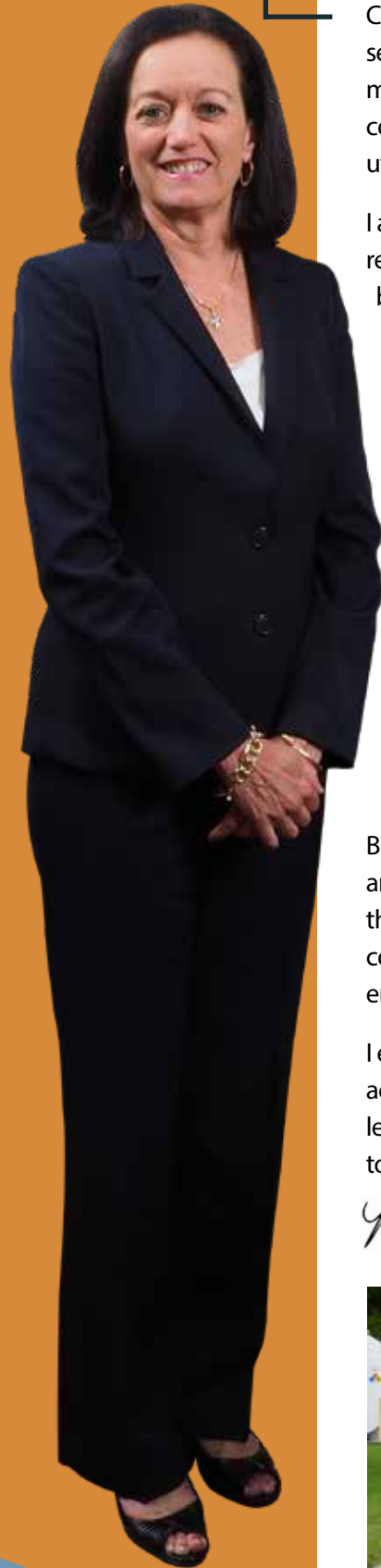
Our Vision:

KUB exists to serve its customers, improving their quality of life by providing utility services that are safe, reliable and affordable.



KUB consolidated audited financial statements are available as an insert, and both the consolidated and full audited financial statements are online at www.kub.org.

CONNECTING OUR COMMUNITY



Community has been at the heart of KUB for its nearly 80 years of service. I am proud of our history and continued commitment to our more than 459,000 customers. Our mission has not changed – we are committed to improving our community’s quality of life by providing utility services that are safe, reliable, and affordable.

I am especially proud of KUB’s ongoing legacy as I announce my retirement this year. In my 15 years as KUB’s President and CEO, it has been an honor serving the community and working alongside our employees.

There have been many achievements, which you will read about in this report. These achievements are bound together by KUB’s mission to act as good stewards of our communities’ resources. One way we’re doing this is through Century II, KUB’s long-term infrastructure management program that includes maintenance and replacement strategies for each system to carry us into the next 100 years of service.

KUB is also taking a step forward by leveraging new technology. The Century II Grid Modernization Program, for example, will replace more than 400,000 electric, water, and natural gas meters with advanced meters. The technology benefits our customers with quicker service restoration and KUB’s ability to perform more functions remotely. Customers also have improved access to usage data to help them find ways to conserve energy and water to reduce their bills.

But most importantly, we continue to provide outstanding service to our customers, year in and year out. We were fortunate to receive an incredible number of awards and recognitions this year from community and industry organizations [see next page]. The common thread connecting these achievements is our employees. These awards are a testament to our employees and their commitment to the community.

I end my tenure at KUB with a note of gratitude and humble appreciation for all that has been accomplished, not only in my years as CEO, but throughout KUB’s history. KUB is built on the legacy of those that came before us and will continue to thrive because the work being done today will take care of our community for generations to come.

Miritta Roach



OUTSTANDING PERFORMANCE

FY18 was a banner year for awards at KUB with accolades from both the industry and the community. The American Public Power Association (APPA) once again recognized KUB’s electric system as a diamond level Reliable Public Power Provider (RP3), with KUB achieving a perfect score on the recertification. The program recognizes utilities that demonstrate high proficiency in reliability, safety, workforce development, and system improvement. KUB first achieved the APPA’s diamond designation, the highest level of the program, in 2015.

The American Public Gas Association (APGA) named KUB to its System Operational Achievement Recognition (SOAR) Program. SOAR honors natural gas distribution utilities that demonstrate a commitment to operational excellence in four areas: system integrity, system improvement, employee safety, and workforce development.

KUB’s wastewater treatment plants also have a long history of excellent performance marked by numerous awards from the National Association of Clean Water Agencies (NACWA). And the Association of Metropolitan Water Agencies recognized KUB’s water system with a Platinum Award for Utility Excellence.

And while utilities are the backbone of our community, KUB knows it takes partnerships to connect a community and help it thrive. In 2018, KUB, along with partners TVA, Knoxville-Knox County Community Action Committee (CAC), and the City of Knoxville, received the Governor’s Environmental Stewardship Award for Knoxville Partnerships for Low-Income Weatherization. The award highlights the progress of the Round It Up (RIU) and Knoxville Extreme Energy Makeover (KEEM) programs for energy efficiency retrofits of nearly 1,500 homes in low-income areas.

Knoxville Area Urban League also honored KUB with its Corporate Leadership Award in 2017. The award recognized KUB for its community involvement, including the TeenWork program, and environmental efforts, like KEEM and RIU.

KUB also received awards that recognize our employees’ charitable and volunteer efforts. Volunteer East Tennessee named KUB the 2018 East Tennessee Corporation of the Year and United Way of Greater Knoxville recognized KUB and the International Brotherhood of Electrical Workers Local 760 as a 2017 Champion Company [see page 13].





ELECTRIC SYSTEM

Century II Replacement Program

Transmission Lines

COMPLETE FY19: 46% (118 of 259 miles)

10 YEAR PLAN REMAINING

Poles

COMPLETE FY19: 18% (21,010 of 120,000)

10 YEAR PLAN REMAINING

KUB's electric system remained strong in FY 18 with customers enjoying historically high reliability. Electric reliability has significantly improved over the past 10 years through a combination of ongoing maintenance programs, like vegetation management, and Century II replacement programs.

KUB is committed to ongoing investment in our electric system to help ensure continued strong performance. That investment includes replacing or upgrading aging poles, overhead wires, and underground cables. We are on track to replace approximately 2,400 poles and 13 miles of underground cable a year.

In FY 18, KUB continued to rebuild its entire 69kV transmission line system. This 10-year program will improve electric reliability and upgrade KUB's communication infrastructure by installing fiber optic communication lines to every substation.

KUB is also investing \$1 million annually to expand the use of distribution

automation to further improve reliability. This technology enhances KUB's ability to automatically isolate problems, reduce customer outages, increase operational efficiencies, and improve power quality.



Reliability is essential for our customers – and a driver for economic development in our community. SH Data Technologies broke ground on its new location at The Fort in Knoxville in FY 18, investing \$85 million to refurbish a vacant building and create a new state-of-the-art Tier 3 data storage center, which requires extremely reliable electric service. To meet this need, the Fort will be served by multiple substations, electric circuits, and new technologies deployed as part of KUB's grid modernization initiative. With these, the location is expected to have electric service interruption around two seconds per year. The Fort will be one of KUB's top ten electric customers once it is fully operational.



ELECTRIC SYSTEM STATS

688 square mile service area

Customers: 206,433

5,654,388 megawatts total purchased power

5,362 miles of service lines

63 substations

Bond Ratings
Moody's Aa2
Standard & Poor's AA+

1,328,313 kilowatts (kWh)* Peak Day (2-20-15)

3,029,500 kVA Peak Capacity

\$426 million purchased power cost

78% of sales

12,000 kWh annual use by typical residential customer

\$106.93/month

\$3.52/day**

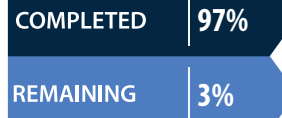
A kilowatt-hour (kwh) is the amount of electricity required to burn a 100-watt light bulb for 10 hours.



NATURAL GAS SYSTEM

Cast Iron/Ductile Iron Replacement Program

Averaged 8 miles per year
35-year program near completion



KUB continues to focus on Century II natural gas replacement and maintenance projects to provide a safe, reliable system to serve current and future customers. Natural gas is highly regulated for safety, and KUB's Century II programs support all regulatory requirements.

KUB meets or exceeds the minimum federal safety standards through system maintenance, operations, safety surveys, and replacement programs. KUB continued work in FY 18 to complete the 35-year replacement program to remove all cast iron mains and replace with polyethylene pipe that has a longer life and lower maintenance costs. Work is also underway throughout KUB's natural gas system to replace steel distribution pressure mains with polyethylene pipe. Since 2007, KUB has replaced more than 38 miles of steel main with replacement projects ongoing.

In FY 18, work continued on a new gate station and main installation in South Knoxville. The new infrastructure improves system reliability and

supports growth. The new station will have modern, automated controls to help improve operational flexibility and reduce costs.

KUB has also implemented a natural gas system growth initiative to help promote customer growth on KUB's system. Included in this initiative is the Natural Gas Appliance Rebate Program, which is an incentive for existing residential customers to convert electric or propane appliances to natural gas. Also included is a pilot program that offers the installation of a new natural gas water heater to qualifying customers. Both programs are intended to incentivize the use of natural gas appliances in customer homes.

Natural gas system improvements and new infrastructure support reliability, operating flexibility, and growth in the community. Through the Century II infrastructure management program, KUB's investment in the natural gas system ensures the system continues to meet our customers' needs.



NATURAL GAS SYSTEM STATS

289 square mile service area



Customers: 102,199



12,996,747 dekatherms total purchased gas

2,444 miles of service mains



Bond Ratings
Moody's Aa2
Standard & Poor's AA

140,204 dekatherms (dth)*, Peak Day (1-17-18)
157,381 dth Peak Capacity



\$56 million purchased gas cost
50% of sales



605 therms annual use by typical residential customer
\$58.39/month \$1.92/day \$1.16*/therm

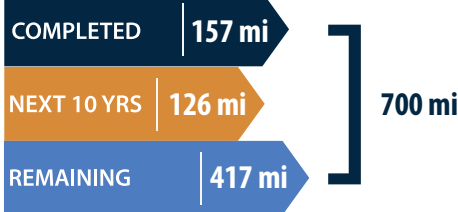


* A therm will dry six loads of clothes in a gas dryer.



WATER SYSTEM

Pipe Replacement Program
 cast iron and cement pipe prioritization
 1% annual replacement rate
 All galvanized main replaced by FY 23



Since 1926, KUB's Mark B. Whitaker (MBW) Water Plant has sustained an excellent record for providing safe, high-quality drinking water to our customers. To continue that quality of service, KUB continues to invest in Century II improvements for our plant, state-of-the-art water quality laboratory, and distribution system.

In FY 18, KUB completed the \$4.5 million project to transition MBW's treatment process from gaseous chlorine to sodium hypochlorite. The new treatment process requires much less maintenance and eliminates gaseous chlorine hazards.

KUB has also embarked on a plan to provide increased resiliency at MBW. This multi-year initiative invests over \$100 million in capital improvements to provide redundancy at the plant. That will provide more flexibility for daily

operations and maintenance activities.

KUB continued work to upgrade the water distribution system in FY 18. These system improvements improve reliability and help KUB continue to deliver on our solid record of outstanding water quality. And our commitment to funding sustainable replacement places us in the American Water Works Association top quartile for infrastructure investment.

KUB is also adding resiliency to the water distribution system with new transmission mains. For example, the Depot Avenue project is a strategic system improvement that began in FY 18 and includes the construction of a new 8,500 foot 36-inch water transmission main to help improve reliability and operational flexibility in moving water to the west of KUB's water treatment plant.



WATER SYSTEM STATS

188 square mile service area



Customers: 79,923



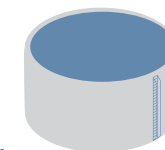
12.4 billion gallons total treated water

1,407 miles of service mains



Bond Ratings
Moody's Aa1
Standard & Poor's AAA

1 treatment plant,
28 storage facilities,
24 booster pump stations



38.3 million gallons reservoir capacity

34.1 million gallons/day average flow



44,880 gallons annual use by typical residential customer
\$24.95**/month \$0.82/day

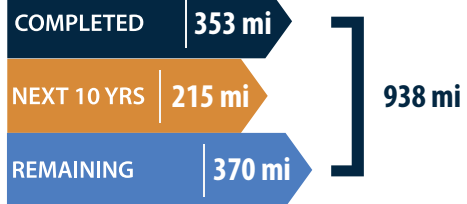
* KUB bills in Ccf. One Ccf (748 gallons) of water will flush a toilet about 374 times.
**Based on monthly rates 7-1-17 to 6-30-18.



WASTEWATER SYSTEM

Sewer Rehabilitation Program

focus on clay and concrete pipe
2% annual replacement rate



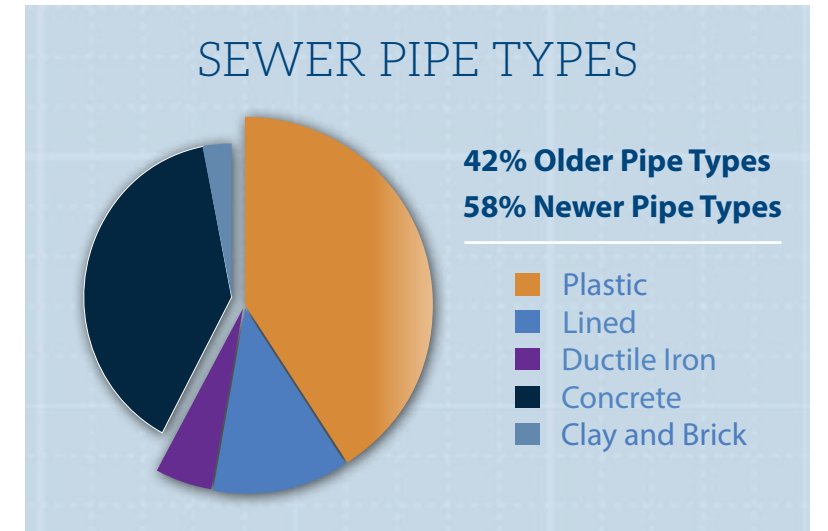
KUB is committed to providing customers with safe, reliable wastewater service to protect the public and the environment. In 2014, KUB completed federal Consent Decree (CD) collection system projects to reduce sanitary sewer overflows (SSOs). KUB then transitioned the wastewater system under Century II with our other systems. The work has paid off – the wastewater collection system has continued to see a decline in sanitary sewer overflows (SSOs), which are down more than 82 percent from 2003. And 2017 marked the lowest number of SSOs on record. This marks the fourth consecutive year we have set a record low for SSOs.

Century II upgrades are also underway at KUB's treatment plants, including a \$52 million project at the Kuwahee treatment plant that completes the CD requirements. The project will be completed in 2021 and ensures Kuwahee can provide full treatment during heavy rain events.

KUB's Century II sewer rehabilitation program is also making steady progress to replace aging pipes in the collection system. With \$25 million budgeted, KUB will replace over 21 miles of aging pipe at an overall annual replacement rate of 2 percent per year. The system is now made up of over 50 percent newer pipe type (plastic and ductile iron), compared to less than 25% prior to the CD.



KUB's biosolids program was again certified by the National Biosolids Partnership (NBP) at its highest platinum level. KUB's program first received NBP Platinum certification in 2011. Biosolids are nutrient-rich organic matter produced by wastewater treatment. Rather than send nearly 30,000 tons a year to landfills, KUB recycles its biosolids as a certified fertilizer through regional farmers.



WASTEWATER SYSTEM STATS

243 square mile service area



Customers: 71,242



13.7 billion gallons total treated water

1,312 miles of service mains



Bond Ratings
Moody's Aa2
Standard & Poor's AA+

75 lift stations, 4 treatment plants,
6 storage facilities

66.4 million gallons Rated Capacity

44,880 gallons annual use by typical residential customer

\$59.50*/month \$1.96/day

* Wastewater is billed in Ccf and based on your water usage.



ENVIRONMENTAL

TVA EnergyRight® Solutions Top Performer
EPA ENERGY STAR certification for **Miller's Building** headquarters
Annual Tree Line USA Designation since 2001

KUB's commitment to our community drives the work we do every day. That commitment includes being environmentally responsible in our operations. Work began in February 2018 on KUB's new Engineering Building at the Hoskins Operations Center. The many sustainability features included in the design and construction approach are expected to result in LEED certification. Included in the design is a rooftop solar array. This will be the second solar project on the campus: a 5-kilowatt array was added to KUB's Corporate Services building last year. The Engineering Building is expected to be complete in summer 2019.

KUB also upgraded the lighting at its wastewater treatment plants in FY 18. Over 550 light fixtures were replaced with new LED fixtures – a projected reduction of 468,000 kWh, or \$37,000, annually.

The 100 Best Fleets in the Americas program again recognized KUB's fleet as one of the 100 Best Fleets in 2018, with KUB receiving its highest ranking ever at number 73. KUB first received Best Fleets Recognition in 2009. The 100 Best Fleets award program recognizes and awards peak performing public sector fleet operations in North and South America. The program also identifies and encourages ever-increasing levels of performance improvement within the fleet industry.

KUB offers a surplus materials reuse program to the public to avoid landfill disposal of materials that can be beneficially reused. Through the program, the community can request items that are no longer of value to KUB, such as wood utility poles, wood pallets, empty wire reels, and wood timbers and crates that are part of the shipping materials received with KUB construction materials.



Engineering Building Sustainability Features

Energy efficient light & energy systems

Rooftop Solar Array

45,000 Square Foot Building



COMMUNITY

\$2.3 million raised for **Round It Up** since program's start in May 2015

3,270 hours volunteered by **KUB employees** in 2017

\$221,000 raised in 2017 **United Way campaign**

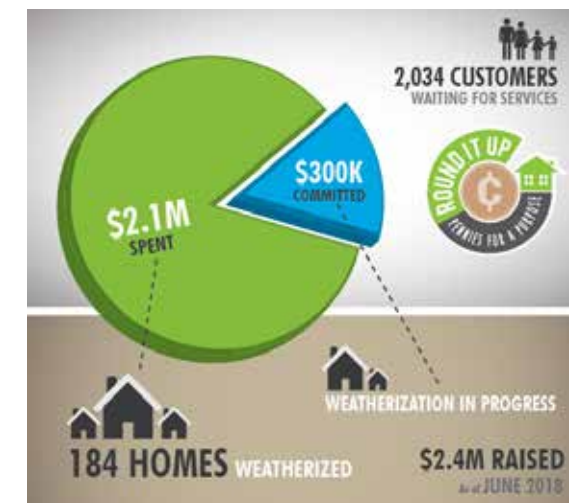
KUB connects our community through more than just pipes and wires. KUB is active in the community through partnerships, outreach events, volunteer efforts, and service projects.

In partnership with the City of Knoxville and CAC, KUB started the Round It Up (RIU) pilot in 2015. Since then, KUB customers have donated over \$2.3 million by voluntarily rounding their bills up to the next dollar. And in March 2018, KUB's Board of Commissioners voted unanimously to continue the RIU weatherization program.

KUB sends 100 percent of donations to CAC's Weatherization Assistance Program to help improve the energy efficiency of homes for low-income homeowners and renters. This provides a root-cause solution to an ongoing problem in our community—low income residents in energy-inefficient homes that are costly to heat and cool.

KUB employees are given the opportunity to participate in the communities we serve through the Vol Time program. The program allows employees up to eight hours of paid time annually for approved volunteer events.

KUB employees also give back to the community through the annual United Way fundraising campaign. The United Way of Greater Knoxville recognized KUB and the International Brotherhood of Electrical Workers Local 760 as a 2017 Champion Company. That designation is given to those that have donated \$1M or more over the past five years. This award is a testament to our employees' and retirees' generosity—since there is no corporate KUB contribution, all donations come from individuals who voluntarily donate and participate in fundraisers.





www.kub.org