

STEWARDSHIP.

RELY ON US.



Knoxville Utilities Board

2015 Annual Report



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

Shared Values:

- We value the safety and well-being of our customers and employees.
- We value fairness, and try always to make decisions that provide the greatest good for the most people.
- We are in a position of trust and hold ourselves to high ethical standards.
- We improve the value of our services through efficiency, innovation and communication.
- We value the commitment and hard work of our employees.
- We are environmentally responsible in our operations and support the sustainability of our communities' natural resources.
- We participate in the communities we serve.

Our Mission:

Our mission is to act as good stewards of our communities' resources: utility assets, customer dollars, and the environment. We work to safeguard those resources and enhance their value for the people of the communities we serve and generations to come.

We Measure Our Success by:

| Customer Satisfaction | System Performance | Financial Performance | Safety Performance |
|-----------------------|--------------------|-----------------------|--------------------|
|-----------------------|--------------------|-----------------------|--------------------|

Keys to Success:

| Managing Our Utility System Infrastructure | | |
|--|-------------------------------------|---|
| Electric | Natural Gas | Water |
| Wastewater | | |
| Improving The Customer Experience | Managing Our Finances Effectively | Meeting Or Exceeding Regulatory Standards |
| Investing In A Skilled, Diverse Work Force | Partnering For Economic Development | Being Environmentally Responsible |



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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.

KUB Board of Commissioners

Nikitia Thompson – Chair

Kathy Hamilton – Vice Chair

Bruce A. Anderson

Celeste Herbert

Sara Hedstrom Pinnell

Eston Williams

John Worden

Management

| | |
|---|---|
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| Bill Elmore Executive Vice President and Chief Operating Officer | Julie Childers Vice President |
| Mark Walker Senior Vice President and Chief Financial Officer | Derwin Hagood Vice President |
| Susan Edwards Senior Vice President and Chief Administrative Officer | Dawn Mosteit Vice President |
| Eddie Black Senior Vice President | Paul Randolph Vice President |
| | Dennis Upton Vice President |



Rely On Us: Our Mission Is Stewardship

Running four utility systems, serving more than 445,000 customers, is a complex responsibility. Each system has different regulations and challenges, but the common element for all is our commitment to stewardship.

Whether the job is routine maintenance or planning a new substation, we continually work to improve utility assets, put customer dollars to wise use, and protect our environment. That requires extensive long-term planning based on what provides the greatest good for the most people.

Under Century II, our infrastructure management program, we plan a minimum of 10 years ahead. The KUB Board's ongoing commitment to funding Century II allows us to make and—most important—implement those plans. Periodic small increases to each system's rates, along with prudent use of debt, help distribute costs fairly between current and future customers.

We plan long-term, but we look day-to-day for operating efficiencies and ways to enhance the value of our services. KUB employees found efficiencies this year, for example, projected to save customers \$126 million over 10 years.

Even when cutting costs, we still focus on safe, high-quality service, and our efforts have been recognized. During this report timeframe, KUB received two safety awards from the American Gas Association, maintained an excellent water quality record, and earned performance awards at our wastewater treatment plants. Our electric system also qualified as an American Public Power Association Reliable Public Power Provider at Diamond level

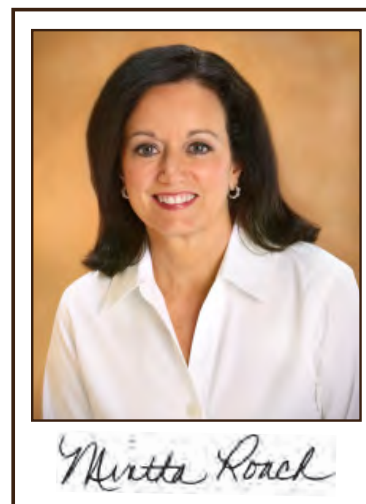
[the highest] on our first application. Only about 6 percent of public power utilities nationwide have achieved that honor.

Our systems also have sound financial plans and strong, high quality credit ratings on outstanding bonds, which helps keep our borrowing costs lower. In 2014, Standard & Poor's upgraded KUB's water system bonds rating to AAA, its highest credit rating.

On the environmental front, we look for affordable ways to incorporate sustainability improvements in everything we do. That means our efforts benefit the environment and make good business sense.

KUB employees are committed to good stewardship and proud of our role in the communities where we work and live. You'll see that reflected in this report through our focus on cost management, utility improvements, the environment, customer service, and community support initiatives.

KUB exists to serve our customers. You can rely on us.



"KUB employees are committed to good stewardship and proud of our role in the communities where we work and live."

—Mintha Roach, President and CEO

Finding Operating Efficiencies

Leveraging Resources

KUB has about 1,000 employees and more than 445,000 "bosses"—our customers. Customers want safe, reliable services, and they want to know that KUB is making the best use of their utility dollars.

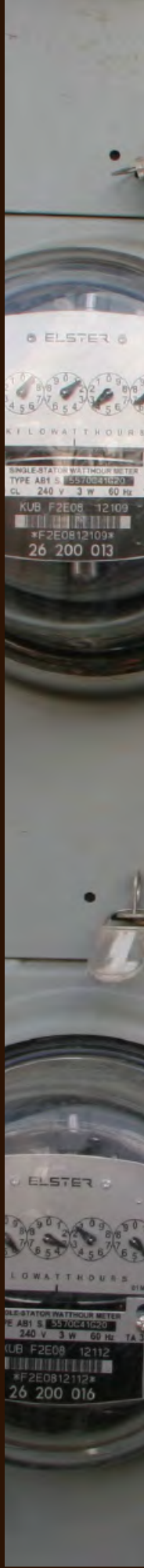
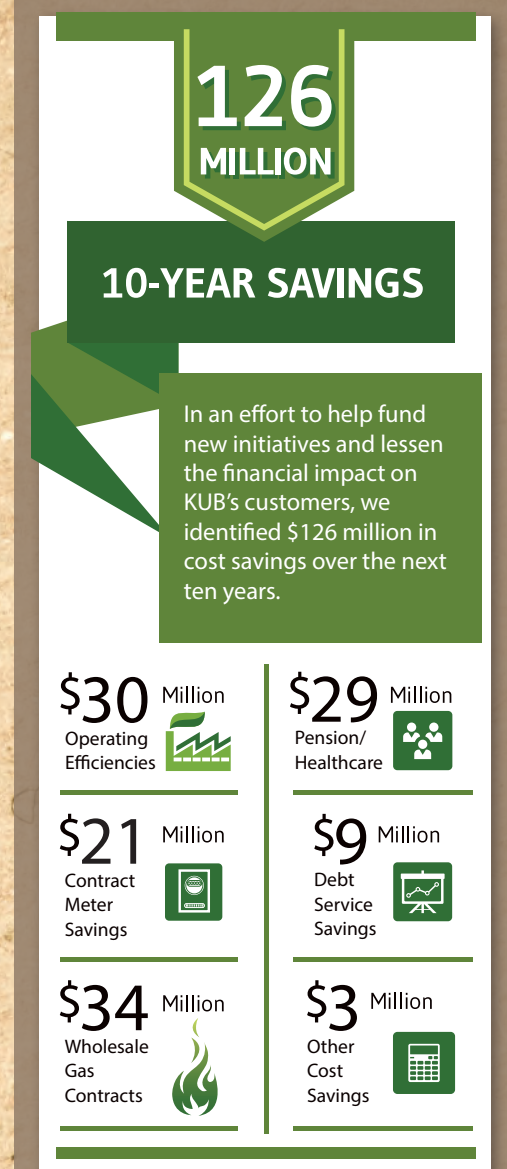
Providing utility services that are safe, reliable, and affordable requires finding the right balance between current and future needs. We want to maintain affordable rates for our current customers; however, we must also ensure we're meeting the needs of generations to come by investing in all our utility systems. And we remain committed to being good stewards of our environment.

Finding operating efficiencies helps us absorb cost increases in other areas and implement more improvements with smaller rate increases. We find those efficiencies through improved processes, automating services, managing benefits and staffing levels, and more.

In an effort to help lessen the financial impact on KUB's customers and fund new initiatives, we identified \$126 million in cost savings over the next ten years, including \$30 million from various operating efficiencies, \$29 million in lower than expected pension and post-employment health care expenses, and \$35 million in lower wholesale natural gas costs.

Major components in the \$30 million savings in operating efficiencies included approximately \$7 million in expected utility service savings and \$6 million in payroll savings. KUB identified another \$4 million from decreased chemical costs due to new plant processes and \$3.4 million from reduction in projected contractor expenses. KUB will also see savings from automated meter infrastructure (AMI) [page 8]. KUB installed a system-wide communications network in 2011 for an AMI pilot (pictured, right) and will deploy new AMI-capable meters over the next several years.

The foundation of good stewardship is responsible day-to-day management and long-term planning and investment. Both are vital to improving reliability, helping ensure safety, meeting regulatory standards, and being environmentally responsible. Most important, they will help KUB continue to meet customers' needs for generations to come.



Electric System

Putting Long-Term Plans Into Action

At KUB, we want our services to be so reliable that customers never have to think about them. You flip the switch, the lights come on. To achieve that, we have to think about our services every single day and put our long-term plans into action.

Utility assets have a long life-cycle (some 100 years, or longer), but they do need maintenance and, eventually, replacement. The employees who manage such assets today won't be at KUB for the next replacement, but KUB ensures their good stewardship will continue through our Century II asset management program. The KUB Board endorsed plans for periodic small rate increases and the prudent use of debt to fund improvements and help spread costs over the lifetime of the assets and between current and future customers.

Just as equipment ages over time, technology advances. Many current KUB electric system components, including substations, date from the 1950s and 1960s and need modernization to support new technology. Out of KUB's 61 substations, nearly half have already been upgraded.

Our transmission system upgrades include installing fiber optic cable for better, more reliable communication and control to support our deployment of automated meters [see pages 8 – 9]. The upgrades will also help us detect and isolate affected areas during system emergencies and respond quickly to provide the reliable service our customers expect. [These upgrades, along with existing KUB practices, recently led The American Public Power Association to recognize KUB's electric system as a top Reliable Public Power Provider. For more, see page 8.]

Other Century II electric work includes replacement of all direct-buried cross-linked polyethylene underground cable by 2021, improving reliability for KUB's underground electric system. By 2021, KUB will also have upgraded approximately 62 percent of our transmission system. To date, we have replaced 9 percent of our 130,000 electric poles. Going forward, we plan to upgrade 2 percent of our poles per year.

In 2014, KUB completed the first significant upgrade to our network that supports the growing, revitalized downtown area. Over the next 10 years, we will spend \$8 million to upgrade the electric service lines that feed individual buildings and update communications technology to provide better operational information on the network and ensure continued reliability.

Improving 100 percent of any of these assets doesn't mean we're done; it means it's time to start again under the sustainable life-cycles we've established with Century II. To continue to be good stewards, we must remain focused on maintaining and improving vital utility assets to better serve current and future customers.



"Hardening the system is paying off! Tree pruning, new poles, new hardware, smart technology. I know it's paying off, because I've lived it."

**—Steve Proffitt,
Lineman Supervisor**



Natural Gas System

Focusing on Safety, Growth, Environment

KUB's natural gas system is an excellent example of the impact of steady asset replacement over time and how that supports KUB's primary system goals of safety and service. It also exemplifies how business decisions can support both customer service and the environment.

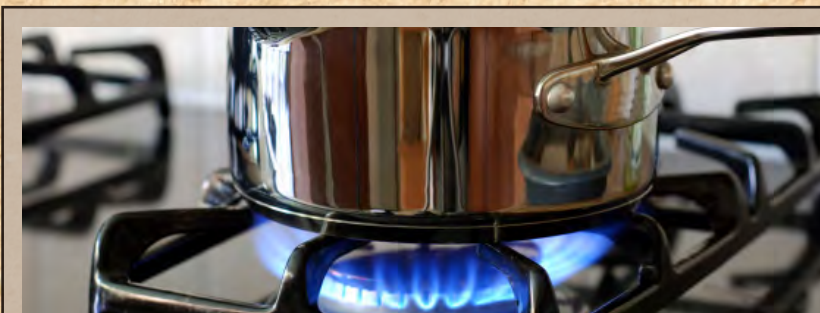
For example, KUB is nearing the completion of a cast iron pipe replacement program that began in 1980. We included that program, and others, under the Century II asset management and replacement program we launched in 2007. We have replaced more than 150 miles of this older style natural gas pipe to date, with about eight miles remaining. Those sections will be replaced during upcoming projects with the Tennessee Department of Transportation.

Ongoing Century II work will next focus on replacing our low-pressure steel pipe by 2035. Thanks to such efforts, "newer" pipe types, including plastic and high pressure steel, make up 90 percent of KUB's 2,300 miles of natural gas distribution system. Those pipes last longer than the old types of pipe and have lower maintenance costs.

Current natural gas system projects scheduled for completion in fiscal year 2016 prove that good business decisions can also be good for the environment. KUB and University of Tennessee (UT) partnered on the South Loop project to bring expanded natural gas service to UT's steam plant by November 2015, for example.

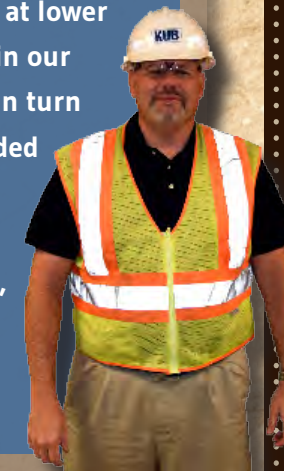
The complex multi-year project involved installing 9.5 miles of high-pressure pipe cross-country, which required 1,800 welds, 13 open-cut road crossings, nine conventional bores, five horizontal directional drills, and eight creek crossings. The completed project helps KUB increase system reliability and safety and meet the needs of current and future customers.

Proper stewardship of the natural gas system requires planning for the future and a day-to-day commitment by all employees to safety in operations. It's not enough that employees focus on safety, however. KUB also emphasizes continual public awareness efforts to help customers use natural gas safely and be aware of safety procedures around pipelines.



"The South Loop project doesn't just improve our service reliability and help the environment. Adding this section of pipe allows KUB to operate at lower pressures within our system, which in turn provides an added measure of safety."

**—Mike Bowden,
Natural Gas
System
Engineering**



Water System

Valuing and Protecting Vital Resources

Out of sight doesn't necessarily mean out of mind. Especially not when it comes to the more than 1,400 miles of "buried assets" that reliably deliver KUB's safe, high-quality drinking water to our customers.

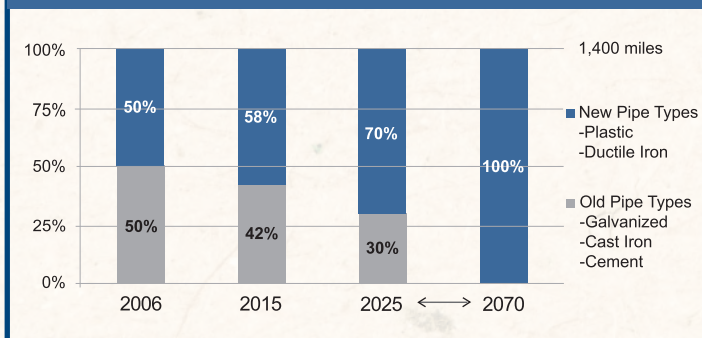
As other water systems nationwide struggle with replacing aging systems, we are pleased to report that KUB's system continues to be on a sound replacement cycle. We accomplish that through Century II, our long-term, comprehensive stewardship plan.

"The lessons learned from the galvanized program have helped pave the way for many of the successes of other Century II programs."

—Kurt Stafford,
Water Systems Engineering



Water Pipe Renewal



Over the next 10 years, we plan to continue to replace older cast iron and cement mains at the rate of 1 percent of the system per year, or 14 miles total per year. Several upcoming water redundancy projects, including installing two new high service water mains, will help ensure reliability if an existing main is out of service.

KUB is also stepping up efforts to find and eliminate water leaks to conserve water and save money. Not surprisingly, older mains have more leaks. Our concentration on pipe renewal will reduce leaks, saving a projected \$1 million on repairs.

Century II builds on a legacy of work over KUB's history to help ensure we continually monitor our system and plan for the future. Even before Century II was established in 2007, KUB had started replacing the 150 miles of galvanized mains in our system, for example. We will complete that work by 2020. With the long-term funding that came with Century II, KUB expanded this program to other parts of the water system.

Maintenance and replacement projects are expensive, but the investment in our community is worth it. And—even with most prices skyrocketing nationwide—KUB's water is still a great value for our customers. At our rate of \$0.0057, or approximately one-half cent per gallon, you could refill a standard 16.9 ounce bottle of water over 1,300 times for just \$1.



Finding and repairing water leaks helps reduce water loss, save money, and conserves a vital natural resource.

Above: KUB employees use a repair clamp on a leaking cast iron water main.

Wastewater System

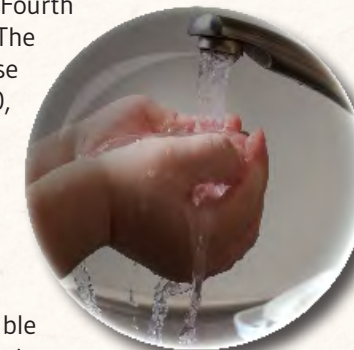
Wastewater Treatment Protects the Public, Environment

KUB focuses on protecting the public and our environment in all our operations, but that is especially true in the wastewater system. In fact, the driving force behind implementing wastewater treatment in the first place was to protect public health and our environment.

From the mid 1870s until the City of Knoxville built its first wastewater treatment plant in 1954, Knoxville's wastewater system provided transportation, not treatment. Knoxville, like other cities, simply piped wastewater to the nearest stream.

KUB acquired the wastewater system from the City of Knoxville in 1987 and began major upgrades. With funding support from the KUB Board, KUB significantly stepped up the pace of improvements in 2004. We set a replacement rate of 25 miles (or 2 percent of our collection system) a year, and rehabilitated approximately 25 percent of older pipes by 2014.

In 2005, KUB received a federal Consent Decree (CD) that mandated a schedule for improvements. KUB completed all collection system projects required under the CD in 2014. We have also completed CD Phase I projects at our Kuwahee and Fourth Creek wastewater treatment plants. The combined collection system and Phase I plant projects completed by June 30, 2015, totaled \$495.5 million. We will complete Phase II plant projects by 2021, bringing projected total costs for CD projects to \$650 million.



To officially close the CD, KUB must demonstrate that we have a sustainable plan for ongoing maintenance and system improvements. We will meet that requirement through Century II, our infrastructure management program for all systems. Century II will help us ensure we continue to replace 2 percent of our system per year for a sustainable 50-year life cycle.

Century II includes replacement efforts in place before the program itself launched. For example, KUB accelerated replacement of all clay and concrete pipe in our wastewater system in 2005 and will complete that program under Century II by 2040. That doesn't mean we declare victory, however. By then, "newer" plastic pipe first installed in the 1970s will be 70 years old and ready for replacement. Century II will help keep us on track with managing maintenance and upgrades.

The hallmark of good stewardship is adding value to the assets entrusted to your care. KUB employees add value for the present and the future through day-to-day supervision of the wastewater system and long-term planning. Thanks to them, generations of customers will have safe, reliable wastewater service—and a cleaner environment.

"The funding commitment from KUB's Board has allowed system improvements to be made and wastewater overflows to be reduced by 75 percent since 2004."

—Debbie Ailey,
Regulatory Compliance



Above: The Downtown Century II Utilities Upgrade Project.

Enhancing Value

KUB works every day to act as good stewards of our communities' resources. We look ahead for strategic opportunities to enhance the value of our services while being mindful of our customers' ability to pay.

Reliable Power

We are proud to have our electric system services recognized in 2015 by the American Public Power Association (APPA). The APPA's Reliable Public Power Provider (RP3) program recognizes utilities that demonstrate high proficiency in reliability, safety, workforce development, and system improvement. Criteria within each of those four RP3 areas are based on sound business practices and recognized industry leading practices.



KUB achieved Diamond recognition, the highest level of the program, with its first application. The APPA has more than 2,000 community-owned member utilities, with 184 in the RP3 program. There are 16 RP3 utilities in Tennessee, and KUB is one of only

Stewards of Our Resources

"There are 16 RP3 utilities in Tennessee, and KUB is one of only eight in the state who have achieved diamond level recognition."

—Thelas Kimble,
Electric System Engineering



eight in the state who have achieved diamond level recognition.

Grid Modernization

To meet the needs of current and future customers, KUB has identified several new multi-year initiatives that will help us continue to achieve our vision. This includes the system-wide deployment of automated meters, expansion of fiber optic cable, and wireless communication to all KUB substations through the Century II grid modernization program.



With the Century II grid modernization, KUB customers will have access to an online web portal, allowing customers to track their usage, review weather data alongside their energy consumption, and set customized alerts. Customers can use this information to use less energy and lower their utility bills.

(continued from page 8)

The advanced technology upgrades through the Century II grid modernization will allow more efficient operations of the utility systems. It will also help KUB locate outages even before customers call, allowing us to restore power more quickly, sometimes without sending a crew into the field.

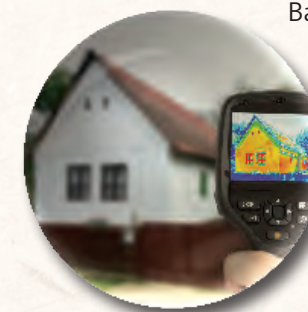
Our customers with automated meters will have access to a customer web portal to monitor their electric, natural gas, and water use. That will give them the tools and information they need to conserve energy and water and better manage their utility bills.

Extreme Energy Makeovers

KUB's initiatives to enhance the value for our customers also include collaboration with TVA and other agencies on a variety of programs, including the Extreme Energy Makeovers Project, part of TVA's Smart Communities program. In August 2015, the Knoxville Extreme Energy Makeovers Team received a \$15 million TVA grant to retrofit older, energy-inefficient, low-income homes. [The team includes City of Knoxville, Knoxville-Knox County Community Action Committee, The Alliance to Save Energy, and KUB.] Makeovers have already begun and the team's goal is to achieve a 25 percent reduction in each home's electric energy use through whole-home energy retrofits.

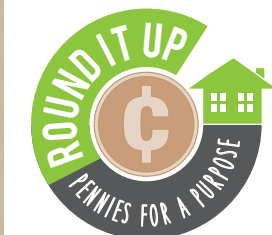
Round It Up

Customers in need of weatherization assistance will also benefit from the Round It Up program.



Based on the recommendation of the IBM Smarter Cities Challenge report, the voluntary program partners KUB with the City of Knoxville and Knoxville-Knox County-Community Action Committee (CAC) to raise funds through KUB bills to help weatherize the homes of low-income homeowners and renters in our community.

KUB sends 100 percent of donations to CAC to help weatherize homes for low-income families. The CAC Weatherization Assistance Program has been recognized by both state and federal agencies for meeting or exceeding all technical and fiduciary requirements. Weatherization provides a root-cause solution to an ongoing problem – low-income residents in energy-inefficient homes that are costly to heat and cool. It also reduces the need for recurring bill payment assistance and helps our environment.



CAC

Knoxville-Knox County
Community Action Committee

Helping People. Changing Lives.



KUB

Environmental Stewards of the Environment

KUB's mission is to act as good stewards of our communities' resources, both for our customers and our environment. We continue to build on our legacy of environmental responsibility in our operations and in our efforts to promote conservation.

KUB's award-winning Biosolids Management Program provides beneficial reuse of residuals to the community. Biosolids are a nutrient-rich byproduct resulting from the treatment of wastewater which can be applied like fertilizer to condition soil and improve yields. Rather than send the material to landfills, the program provides nearly 30,000 tons of biosolids material annually to local farmers as a fertilizer registered with the Tennessee Department of Agriculture.

The National Biosolids Partnership (NBP) gave KUB's program its highest Platinum level certification. KUB's program, which first achieved Platinum status in December 2011, is one of only 34 nationwide and two in Tennessee to achieve NBP certification. The recognition demonstrates a high level of commitment to industry best practices and rigorous quality control. Additionally, the Kentucky-Tennessee Water Association (WEA) presented KUB with an award for Beneficial Use of Biosolids in 2014.

KUB's fleet was again recognized as one of the 100 Best Fleets for 2015 by Government Fleet Magazine and The 100 Best Fleets in North America. KUB's alternative fleet includes four hybrid Ford Escapes, nine half-ton hybrid pickups, eleven PHEV (Plug-In Electric Vehicle) bucket trucks, and one all electric Nissan Leaf. Additionally, KUB's fleet also includes 49 compressed natural gas (CNG) vehicles.

KUB is also helping the University of Tennessee (UT) reduce its carbon footprint. The South Loop Project to extend a high pressure natural gas main to the UT campus is nearing completion, allowing UT to retire its coal-fired steam plant. This plant conversion will remove the second largest source of airborne pollution in East Tennessee, and will be the equivalent of taking 7,000 passenger vehicles off the road a day. [See page 5.]



Above: Spreading biosolids on Joe Jayne's farm.



KUB's Transportation Department with a Plug-in Hybrid Electric Vehicle (PHEV) bucket truck. KUB's fleet includes 11 PHEV bucket trucks.

Community Service

Stewards of the Community

KUB goes beyond providing utilities to participate as volunteers in the community we serve. KUB is committed to good stewardship through volunteer and outreach programs and corporate initiatives to make a difference in our community.

Volunteering has been an important cornerstone of KUB since early in our history, and we are proud that tradition continues today. Our KUB Cares committee organizes volunteer events throughout the year to get employees involved in giving back to the community. And this year, after the success of the 75th Anniversary Week of Service, KUB introduced a new volunteer time policy to support employees' volunteer efforts. Vol Time allows KUB employees the opportunity to receive up to eight hours of paid time annually for approved volunteer events. So far, employees have used Vol Time to help agencies like Ronald McDonald House, Knoxville Special Olympics, Living Lands & Water, and Habitat for Humanity, all located in KUB's service territory.



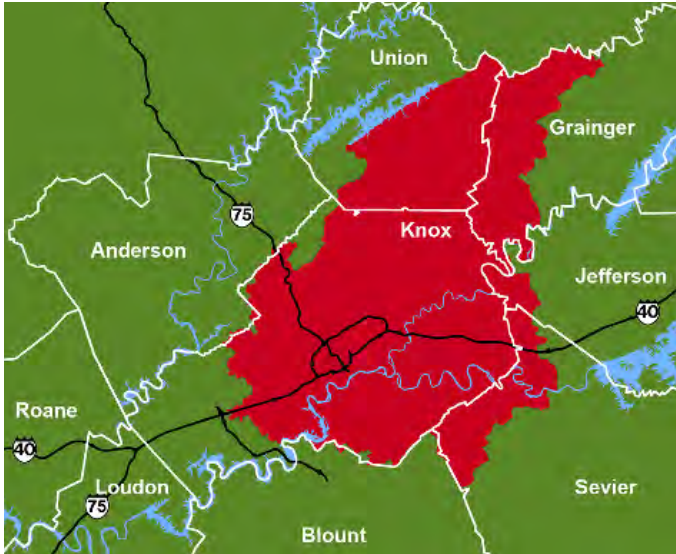
In 2015, KUB's TeenWork program celebrated its 20th year. TeenWork helps Austin East Magnet High School students learn the skills they need to prepare for future jobs. Students that complete the program earn the opportunity to interview for a summer job at KUB or other participating business partners. Since TeenWork began in 1995, 349 students have participated in the program with several participants coming back as college student workers and 10 currently serving as full-time KUB employees.



Service Area Maps and Statistics

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.

Electric Service Area



| | |
|-------------------------------------|------------------------------------|
| Number of Customers | 200,852 |
| Service Area | 688 square miles |
| Service Lines | 5,287 miles |
| Substations | 61 |
| Peak Day Demand (kW) | 1,328,313 (2/20/15) |
| Peak Demand Capacity (kVA) | 2,600,000 |
| Total Purchased Power (MWh) | 5,728,540 |
| Purchased Power Cost | \$420 million |
| Power Cost as a Percentage of Sales | .81% |
| System Bond Rating | Standard & Poor's AA+, Moody's Aa2 |

KUB's Typical Residential Electric Customer

| | |
|---------------------------------------|----------|
| Annual Usage (kWh) | 12,000 |
| Average Monthly Bill* | \$101.29 |
| Cost per kWh | \$0.101 |
| Average Daily Cost for Electric Usage | \$3.33 |

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

*Based on monthly rates for 12 months ending June 30, 2015.

Natural Gas Service Area



| | |
|---|-----------------------------------|
| Number of Customers | 98,693 |
| Service Area | 282 square miles |
| Service Mains | 2,301 miles |
| Peak Day Demand (dth) | 136,356 (02/19/15) |
| Peak Demand Capacity (dth) | 157,381 |
| Total Purchased Gas (dth) | 12,815,706 |
| Purchased Gas Cost | \$64 million |
| Natural Gas Cost as a Percentage of Sales | .57% |
| System Bond Rating | Standard & Poor's AA, Moody's Aa2 |

KUB's Typical Residential Natural Gas Customer

| | |
|--|---------|
| Annual Usage (Therms) | 573 |
| Average Monthly Bill* | \$57.15 |
| Cost per Therm | \$1.20 |
| Average Daily Cost for Natural Gas Usage | \$1.87 |

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

*Based on monthly rates for 12 months ending June 30, 2015.

Water Service Area



| | |
|-------------------------|------------------------------------|
| Number of Customers | 78,553 |
| Service Area | 188 square miles |
| Treatment Plants | .1 |
| Booster Pump Stations | 24 |
| Storage Facilities | 27 |
| Service Mains | 1,407 miles |
| Rated Capacity (mg) | 62.6 |
| Reservoir Capacity (mg) | 36.2 |
| Total Treated Water | 11.7 billion gallons |
| Average Flow (mgd) | 32.0 |
| System Bond Rating | Standard & Poor's AAA, Moody's Aa2 |

Mg equals million gallons. Mgd equals million gallons per day.

KUB's Typical Residential Water Customer

| | |
|------------------------------------|---------|
| Annual Usage (Gallons) | 44,880 |
| Average Monthly Bill* | \$21.45 |
| Cost per Gallon | \$0.006 |
| Average Daily Cost for Water Usage | \$0.71 |

A customer who uses 1,500 gallons of water a month (for example) pays \$13.50 (or 45 cents a day).

*Based on rates as of June 30, 2015.

Wastewater Service Area



| | |
|---------------------|------------------------------------|
| Number of Customers | 69,847 |
| Service Area | 245 square miles |
| Treatment Plants | .4 |
| Lift Stations | 75 |
| Storage Facilities | 6 |
| Service Mains | 1,315 miles |
| Rated Capacity (mg) | 66.4 |
| Total Treated Water | 13.3 billion gallons |
| Average Flow (mgd) | 36.5 |
| System Bond Rating | Standard & Poor's AA+, Moody's Aa2 |

Mg equals million gallons. Mgd equals million gallons per day.

KUB's Typical Residential Wastewater Customer

| | |
|---|---------|
| Annual Flow (Gallons) | 44,880 |
| Average Monthly Bill* | \$50.50 |
| Cost per Gallon | \$0.014 |
| Average Daily Cost for Wastewater Usage | \$1.66 |

Wastewater is billed on water usage.

*Based on rates as of June 30, 2015.



www.kub.org