



2019 Annual Report

03	Introduction
04	By the numbers
08	Enhancing the customer experience
13	Engineering next-level infrastructure
18	Creating greater value for business
21	Giving back to our community
24	Protecting the environment

As we celebrate our 80th anniversary of serving the community, EPB continues to shape Chattanooga's future as a leader by providing cutting-edge energy and connectivity solutions.

Innovation is part of EPB's culture. Whether it was providing our first customers with electric power back in 1939 or creating the world's first community-wide fiber optic network in 2009, we haven't stopped working hard each day to see how these valuable tools can help shape the future. After nearly a decade of delivering the world's fastest internet and ultra-reliable energy over the country's first PEER certified smart grid, this year EPB welcomed our 100,000th fiber optic customer. We also expanded our research efforts to develop smart grid applications for the future – without ever forgetting why we are here in the first place. In fact, the neighbors we serve responded for the fourth year in a row with the J.D. Power Award for Customer Satisfaction.



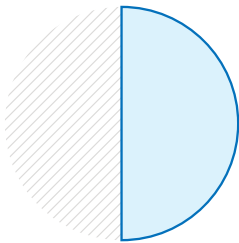
**By the
numbers**



EPB Energy

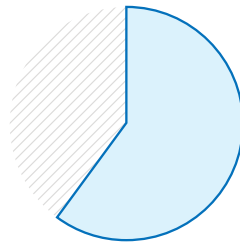
18,700,000

Customer outage minutes reduced or avoided

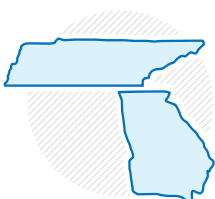


Since EPB implemented Smart Grid automation...

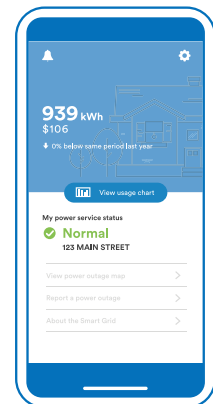
50% Improvement
in annual customer outage minutes



60% Improvement
in annual customer interruptions



\$20.9 MILLION
in PILOT payments to local governments



Customers downloaded MyEPB app
28,836 TIMES

Annual operational savings delivered by the Smart Grid:

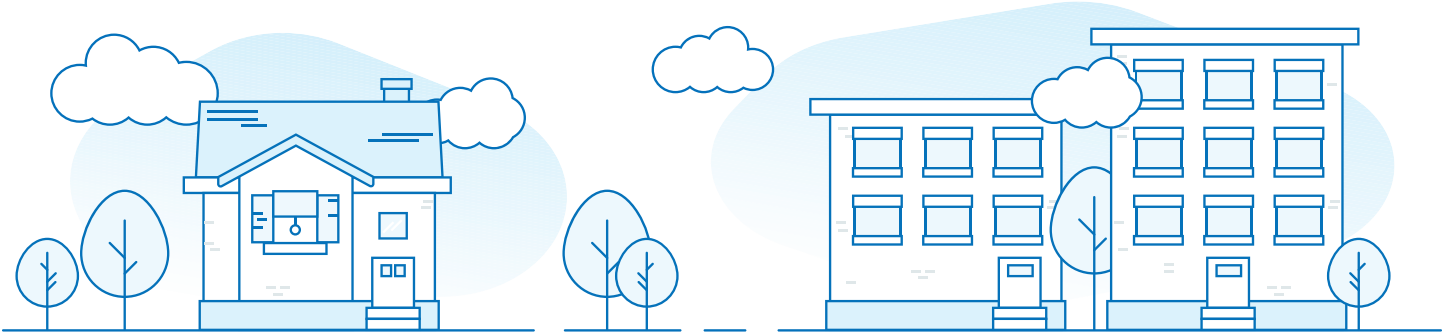
\$3,300,000

Annual savings from automated meter reading:

\$2,700,000



EPB Fiber Optics



Added 5,222 residential customers

Added 1,247 commercial customers



Total EPB Fiber Optics Customers:

103,991

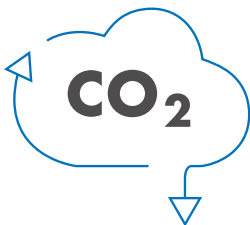
Total Gig customers
(20% of all internet customers):

17,709

Total EPB Smart Network customers:

33,637

Environmental Benefits

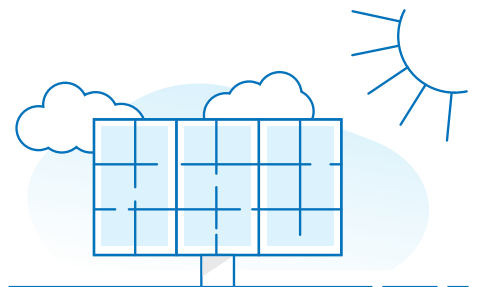


Reduced 3,400 tons of CO₂ emissions

Environmental benefits include

- reduced road miles driven
- enhanced power demand management
- power factor improvement

EPB customers licensed 2,343 Solar Share panels



(over 50% of the 4,408 available panels)

28,202 Paperless Billing accounts
(Electric and Fiber Optics)

7.5 million pounds of waste diverted to recycling by EPB



Community Service

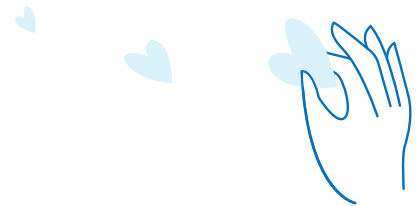


177

Community events & partnerships

16,000+

Hours volunteered by EPB employees



Accolades



Customer-ranked “the best mid-sized utility in the South.”

- **J.D. Power** (2015-2019)

Named one of the “best internet providers” in the nation based on customer feedback.

- **Consumer Reports** (2016-2018)

Readers awarded EPB Fiber Optics “Best of the Best in Customer Service” and “Best of the Best Internet & Television Service Provider.”

- **Chattanooga Times Free Press** (2012-2019)



**Enhancing the
customer experience**



Building a fiber optic community 100,000 strong

Just nine years after EPB Fiber Optics launched the world’s fastest community-wide fiber optics network, we reached the milestone of serving more than 100,000 homes and businesses. Thanks to tremendous support from our customers, nearly two-thirds of the homes and businesses in our community enjoy world-class services that make it easier for them to learn, work, and play. As EPB approached this important milestone, employees across the company pulled together in an effort to achieve the goal. Team members launched an “All the Way to 100K” campaign to enlist the support of current customers in referring family and friends to join the community-wide network. Working together, EPB reached 100,000 customers in October 2019.

Celebrating with a “Big Gig”

On October 20, EPB Fiber Optics invited the community to a free family event to celebrate the grand opening of the newly renovated Miller Park, and to dedicate the EPB Community Stage to all of our neighbors right here at home. Filling an entire square block with music, food, games, performances and laughter, EPB gave a day of fun in the park back to those who give us the opportunity to serve every day of the year. Joined by Chattanooga Mayor Andy Berke, EPB CEO David Wade had the honor of revealing to the packed crowd our combined achievement of reaching 100,000 EPB Fiber Optics customers and blowing out the candles on a giant cake for everyone to enjoy.



Giving customers even more of the bandwidth they need

Studies show that the average home now has more than a dozen internet connected devices. And, that number is expected to rise dramatically in the next few years. So to maintain Chattanooga's leading edge and get customers ready for the future, EPB Fiber Optics increased our internet starting speed from 100 Mbps to 300 Mbps—without raising the monthly cost. Leading up to the announcement, it was necessary to upgrade the equipment on the outside of many customer's homes so they could take full advantage of the faster internet speeds. EPB's Field Services team went above and beyond to complete the upgrades in time for the unveiling. Plus, other EPB team members updated internal systems and provided additional tech support to proactively help customers maximize the power of the faster fiber optics internet. Preceded by a teaser advertising campaign to build anticipation for this extraordinary upgrade, EPB made the announcement on "Happy Day" – February 1, 2019.

Even faster internet for less

In conjunction with our free speed increase on our standard internet offering, EPB Fiber Optics also gave Gig customers an even better value by adjusting the cost of our 1,000 megabit-per-second internet from \$69.99 to \$67.99 per month. This announcement drastically boosted Gig-speed customers by more than 1,300 subscribers in the first three months alone, and sales have continued to rise steadily ever since. The exceptional value of the Gig helps EPB remain competitive in the internet market and continues a consumer trend towards adopting internet with enough bandwidth to handle families with a household of connected devices, all running at the same time, with symmetrical uploads and downloads and superior streaming performance.



Changing channels with future-ready TV

These days, TV customers want more control over what they watch, when and where they watch, and how they watch. Consumers are no longer tied to the television screen – they can easily watch video content on other devices like phones, tablets and laptops. They want better value for their TV dollar and a solution flexible enough to adapt to the future of video delivery. So this year, EPB Fiber Optics provided customers the technology they’re looking for with the new EPB Fi TV. This cutting-edge TV service lets customers break free from traditional TV with no set top box required because you can watch with compatible connected devices like smart TV’s and streaming devices such as Amazon Fire TV Stick, Apple TV, computers, tablets and smart phones. Fi TV adds value by offering industry-leading features such as six streams for simultaneous viewing (upgradable to ten), optional unlimited DVR with one year’s storage, and the power of the world’s fastest internet. Along with its exceptional fiber optic video quality and many other outstanding features, the new Fi TV bridges the gap between traditional and streaming television, enabling customers to enjoy the ultimate TV experience powered by the world’s fastest internet.

Delivering an even smarter home WiFi network

More people are depending on their home’s WiFi network to watch streaming video content as well as access other internet-connected devices like security cameras, gaming consoles, smart locks, thermostats, appliances and more. All of these devices running at the same time can create additional drag on WiFi networks. So to help customers make the most of their EPB Fiber Optics internet, our in-home Smart Network WiFi service includes the latest Gig-speed router, professional network setup and ongoing tech support. We have enhanced EPB Smart Network to include network configuration for optimal wireless coverage throughout the home, expert device setup and no-cost return visits to set up other internet connected devices in the future. So far, more than 33,600 Fi-Speed Internet customers have subscribed to this valuable service.



(Hard) hats off to EPB's Construction Department

It takes hard work and expertise to build and maintain the infrastructure EPB relies on to provide electric and fiber optics service throughout our service area. Often, EPB can do our best for customers by going unnoticed. For example, the linemen and crews in EPB's Construction Department work behind the scenes to do critical work. They are a mainstay of EPB, working daily to proactively maintain and upgrade equipment. They also work round-the-clock during outages to repair lines and restore service as quickly as possible. From changing out rotten power poles to installing highly sophisticated computerized smart grid components, the Construction Department is responsible for ensuring services are consistently delivered to homes and businesses every minute of every day. And, with Chattanooga's influx of new subdivisions, apartments, condos and mixed-use developments in just the last three years, the tremendous responsibility of these operations experts is even more important to keeping our community connected.

Proactively enhancing electric service for the future.

St. Elmo was one of first neighborhoods EPB energized more than 80 years ago, so it was time to upgrade systems for a more enhanced energy delivery solution. This year the EPB Construction Department worked with other departments across the company to convert the 4 kV electric distribution network in the St. Elmo community to a 12 kV network with minimal customer disruption. The project also included the installation of additional IntelliRupter automated switches to help provide more reliable power delivery to St. Elmo's nearly 2,000 homes and businesses. As part of the smart grid, these IntelliRupters can further isolate outages and reroute power to customers who would have otherwise experienced a loss of service. In addition to enhancing service, this project reflects EPB's commitment to operational excellence in everything we do.



Engineering next-level infrastructure



Supporting other communities in building fiber optics networks

As more utilities across the country launch their own fiber-to-the-home services, EPB Fiber Optics realized an opportunity to provide the support and expertise to help them improve quality of life in their community, grow their local economy and better compete in the communications market. Working with Network Operations and Field Services, this year the New Products division launched EPB Broadband Solutions, which provides wholesale services and shares with municipalities how they can benefit from the lessons we learned as the utility that built America's first Gig-speed internet. From direct internet access and video transport, to network monitoring and engineering, to 24/7 tech support and customer service including dispatch, EPB Broadband Solutions helps utilities save time and money in building a successful, sustainable fiber optics network in their own communities. So far, EPB has established wholesale agreements with providers in Tennessee, Georgia and Alabama.



Enhancing smart grid security

We're working hard every day to reduce the smart grid's potential vulnerability to ever-changing cyberattack technology. EPB's partnership with the U.S. Department of Energy's Oak Ridge and Los Alamos Laboratories continues to explore the latest safeguards to further enhance the security of the grid, as well as protect customer data. This year, a team of scientists worked with EPB to test QKD, or Quantum Key Distribution. This security technology uses quantum physics to encrypt data, rather than traditional mathematics-based methods commonly used today. In theory, the data cannot be cracked by any computer nor can the data be intercepted without detection. Continued testing is underway and if tests prove successful, the technology could be deployed in Chattanooga and other communities within a few years.



Developing smart grids for the future

The next logical step in ensuring the reliability of a community smart grid is to isolate certain geographic areas into “microgrids” that better narrow or reduce the risk of outages. Traditional microgrids distribute energy independently of the smart grid, but are not scalable in size. So this year, EPB’s Smart Grid Development team continued its research into the progressive technology of microgrids by pioneering their ability to scale in size – large or small – depending on immediate power needs. Through our partnerships with the Department of Energy and the Chattanooga Metropolitan Airport, EPB also completed the deployment of utility-scale batteries to assist with demand reduction in the area near the airport. Additionally, EPB completed initial testing of the microgrid’s communications network and controlling devices, which allows all components to begin functioning as a self-contained network. We will continue to conduct further rounds of testing as more work will be required before putting this technology into full service next fiscal year.



Launched Autonomous Vehicle Test Corridor

This year, as part of the Smart City Collaborative, EPB partnered with the Center of Urban Informatics and Progress (CUIP) at the University of Tennessee at Chattanooga to establish an Autonomous Vehicle Test Corridor on downtown Chattanooga’s Martin Luther King Boulevard. Utilizing a camera system and a variety of speed, audio and air quality sensors installed throughout the testbed, the system can detect and track up to 80 different objects – like vehicles, pedestrians, bikes – at one time while maintaining each object’s anonymity. CUIP’s physical infrastructure is supported by EPB’s gigabit fiber optics network to guarantee high throughput and low latency backhaul. CUIP can use data captured by the corridor system to gain a better understanding of how cars and pedestrians move around on a particular street. For example, our analysis of one street found that pedestrians often cross in the middle of the street, and that many times vehicles travel in the bike lanes. Data such as real-time traffic patterns, near-miss accidents, and even air quality could be used by city officials to address street and signal modifications.



**Creating greater
value for business**



Empowering more efficient energy consumption

This year EPB offered a solution to commercial customers who had no way of accessing real time information about their energy use before receiving a bill at the end of the month. Our Business Power Tracker tool now helps customers get a better picture of their electricity consumption as they use it. And, for customers who require more robust reporting, more detailed monitoring, and the ability to automatically control processes based on their energy use, EPB now offers an Energy Management System that gives customers better insight and control of how they are using electricity, water, air, gas and steam. These complex management systems are often difficult to specify and expensive to install. So with this program, EPB removes the complexity and upfront expense for the customer by using our energy and communications expertise to implement the right solution. We also offer service plans for software support, IT support, and even offsite hosting for the system. In all, EPB's Energy Management System is another way we're helping customers achieve more efficient energy consumption.

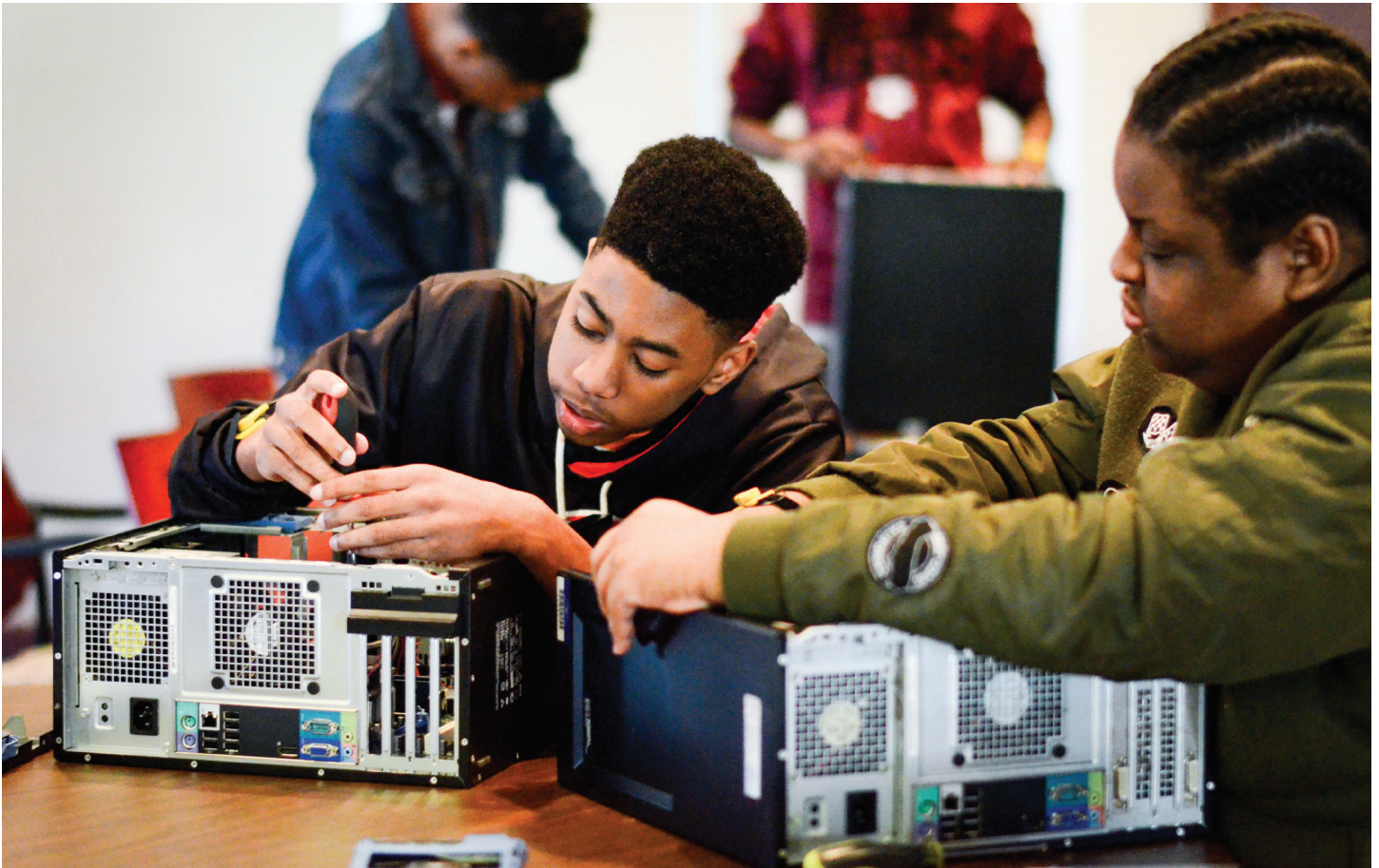


Helping local businesses thrive

As part of EPB's commitment to supporting community businesses we continue to enhance commercial products to meet their ever-changing technology needs. For example, we adjusted the rate structure of dedicated internet connections such as VLANs and E-Line (Ethernet), both linear and redundant, to help support the growing need for secure, uninterrupted service. These types of connections are critical to entities like hospitals that rely on quick access to digital records. We also enhanced our Hosted Phone (HPBX) service and now more than 2,200 local businesses are benefiting from our ever-evolving product set. Bulk Internet has given owners and managers of Multi-Dwelling Units (MDUs) like apartments and retirement communities, the ability to include EPB's 300 Mbps and Gig internet as a rental perk. And to increase our growing market share, we worked hard to ensure that all new MDUs and residential developments are equipped to offer EPB Fiber Optics. And we will continue to enhance new and existing products to help local businesses stay competitive, and offer their customers a better quality of life.



**Giving back to
our community**



Mentoring tomorrow's leaders

This year, EPB was once again involved in a number of student mentoring programs in an effort to prepare the next generation for the careers of the future. The STEP-UP paid summer internship program helps Hamilton County students interact with EPB professionals to explore career opportunities and learn modern business skills. During the process, students were also able to offer EPB new ideas from a fresh perspective. In addition, EPB employees partnered with Chattanooga Girls Leadership Academy to mentor nearly two dozen ninth graders through the SPARK program. Complementing a Science-and-Technology-based curriculum, SPARK helped girls this year develop their own mantra and gain the self-confidence to better position themselves for successful careers in a competitive, knowledge-based global economy. EPB employees also volunteered their time working with students through the Urban League of Greater Chattanooga. In all, EPB employees volunteered more than 16,000 hours this year supporting 121 community organizations.



Preparing future-ready students

EPB expanded our commitment to local education this year to include a corporate sponsorship of the Hamilton County Schools' Future Ready Institute. EPB committed to a long-term partnership with Tyler Academy to create the EPB Institute of Technology and Networking that provides mentorship and training assistance for students interested in pursuing careers in coding and information technologies. The goal of the partnership is to utilize an IT-based curriculum to instill in students a strong understanding of computer systems and programming so they can succeed in high-demand career opportunities. This progressive educational opportunity enables students to participate in the program each year of their High School career. One of the highlights this year was a field trip to EPB, where students engaged with EPB IT employees in a field exercise to help them understand the mechanics of troubleshooting and assembling components of computers.



**Protecting the
environment**



Promoting environmental sustainability

In celebration of Earth Month in April, Moxy Chattanooga Downtown partnered with EPB to express a commitment to environmental sustainability by purchasing enough renewable energy credits to cover all 12 of the special events planned at the hotel over the next year.

Through the partnership, EPB will provide 100% solar generated energy toward the credits from the Solar Share facility on Holtzclaw Avenue, Chattanooga's first and only community solar deployment. In doing so, Moxy Chattanooga is reducing an estimated environmental impact equivalent to charging 1.4 million smart phones. Moxy Chattanooga Downtown is also the first hotel in the community to offer guests the option of reducing the estimated environmental impact of their lodging at a cost of \$1.58 per night. Participating guests support local solar power generation while reducing an estimated environmental impact equivalent to burning 16.4 pounds of coal.



Leading environmental stewardship

This year, EPB furthered our commitment to supporting Chattanooga's sustainability initiatives.

- EPB was awarded the Governor's Environmental Stewardship Award for Pursuit of Excellence, recognizing all of EPB's environmental efforts over the past two years
- Six major EPB facilities were Green Light certified, a third party green certification earned through green I spaces
- EPB's downtown headquarters' LEED certification moved up to LEED Silver
- EPB, Life Spring and green I spaces launched the Green and Healthy Homes pilot, a program aimed at using energy efficiency and air quality tactics to improve childhood asthma outcomes
- The Chattanooga Clean Energy for Low Income Communities Accelerator (CELICA) group led by EPB, the City of Chattanooga, and green I spaces hit a \$3 million funding milestone to be used for Home Energy Upgrades, Green and Healthy Homes, Climate Action Plans, and an energy/ecofriendly workforce development program
- EPB's Green Building Leaders completed the nation's first local sustainability professional credential, Green I Leader. We also held the first Green Business Expo, inviting business leaders to learn about our programs, processes and vendors
- This year EPB completed our 250th Home Energy Upgrade since the program started in 2015, and will continue the program for approximately 100 more homes with an additional \$1 million in financial support