



2020 Annual Report

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During the 2019-2020 Fiscal Year, EPB continued to utilize advanced technology to help our customers seize opportunities and withstand challenges.

While our partners in the Smart City Collaborative joined EPB in leveraging the Smart Grid to draw more than \$110 million in national research, local companies like Southtree used the world's fastest internet to their competitive advantage in adding jobs and solidifying their position as an industry leader.

At the outset of the COVID crisis, EPB's fiber optic network gave our customers ample capacity to choose faster speeds when the internet became the last critical lifeline for earning, learning, and staying connected with others. In April, when tornados ripped through our community, the EPB Smart Grid kept the power on for tens of thousands of households allowing us to more quickly restore the remaining customers, so they could begin repairing the damage.

Whether you're creating something new or re-building what's essential, EPB is there for all of our customers with advanced technology and innovative solutions.



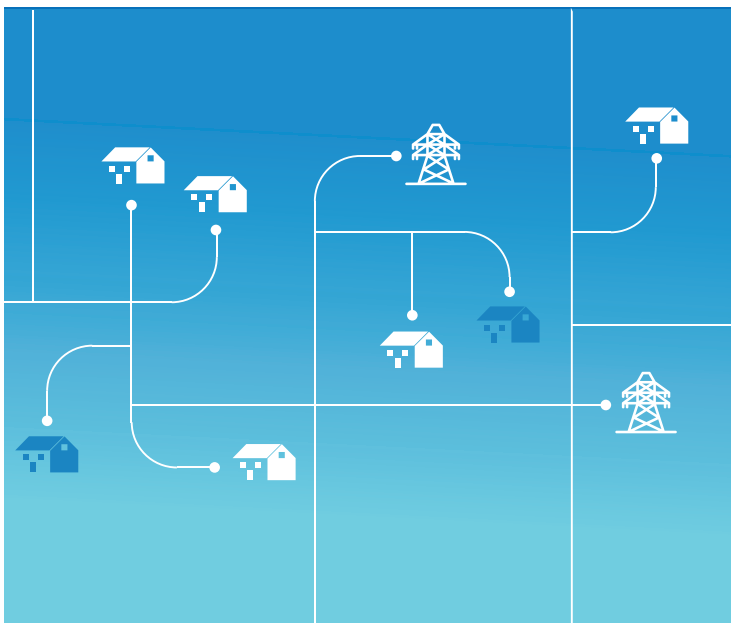
**By the
numbers**



EPB Energy

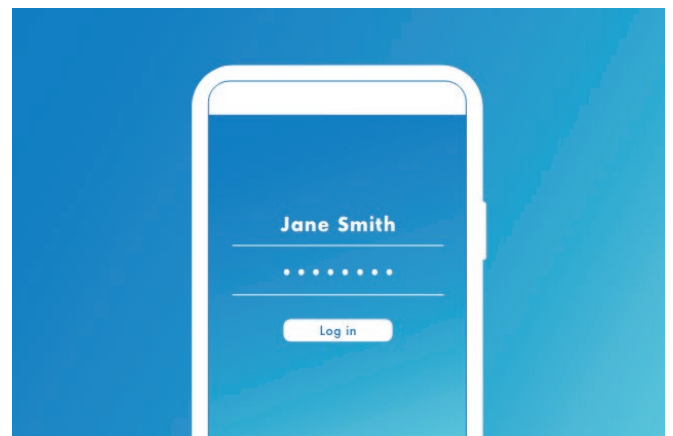
60,000,000

Customer outage minutes reduced or avoided
by the Smart Grid



Annual operational savings delivered by the Smart Grid:

\$3,300,000



Number of unique MyEPB app users:

39,950

Annual savings from automated
Smart Grid meter reading:

\$2,700,000

\$21,379,455

In PILOT payments to local government



EPB Fiber Optics



Added 7,719 residential customers

Added 26 commercial customers



Grew EPB Fiber Optics subscribers to:

111,668

total customers

Total Gig customers
(Grew from 19% to 27% of all internet customers):

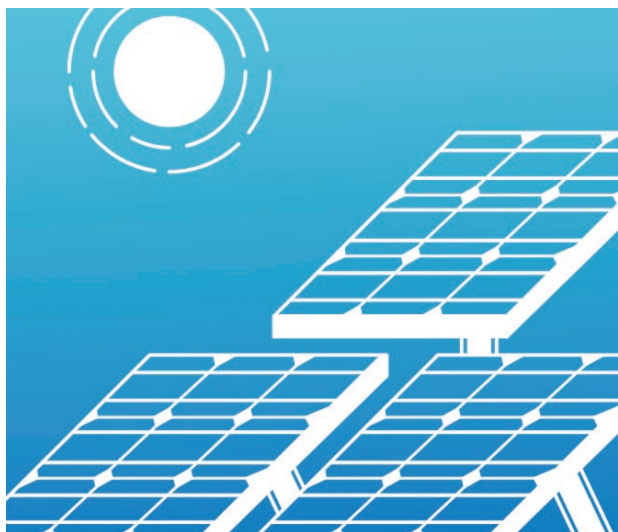
26,114

Total EPB Smart Network customers:

43,887

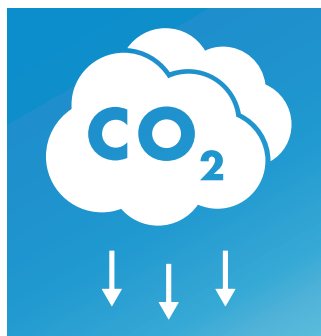
(added 10,250 during the year)

Environmental benefits



EPB customers licensed

2,257 Solar Share panels



Reduced 12,407,518 tons of CO₂ emissions

Environmental benefits from the Smart Grid include:

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

78,018

Paperless Billing accounts (Electric and Fiber Optics)
(added 52,156 during the year)

8,173,042

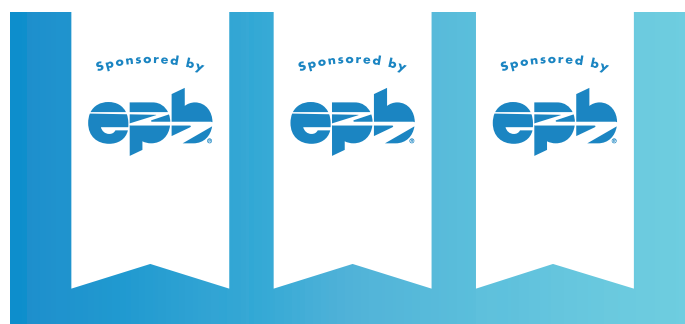
Pounds of waste diverted to recycling and compost

Serving the community



Professor Gig-A-Watt delivered educational presentations to:

16,365 students



Community partnerships:

189

Annual purchasing from Minority & Women-Owned Businesses nearly doubled to:

\$10,359,835

(Total purchasing since program began grew to \$76.7 million)

Accolades

Social media clips from customers



James David
@MrJimDavid

Every time I leave #Chattanooga, I am shocked by how slow the internet is without the gig. Thank goodness for @EPB_Chattanooga and their amazing impact on our town.



Mark Pace
@themarkpace

Another example why @EPB_Chattanooga is the best.

Note: I hadn't reached out to them. They're doing this for all impacted customers.

"We're crediting your fiber optics bill for tornado disruption"



Public Power
@publicpowerorg

@EPB_Chattanooga's smart grid prevented about 44,000 customers from experiencing a power outage that would have lasted hours or perhaps days when tornadoes, heavy storms and high winds rolled across the community earlier this month.



United WayCHA
@UnitedWayCHA

Thank you @EPB_Chattanooga and @TVAnews for partnering with us for our Restore Hope Fund and doing a contribution match up to \$50,000!

As of right now, more than \$500,000 has been committed to the Restore Hope Fund.



Orange Grove Center
@orangegrovecr

Thank you @EPB_Chattanooga who came to one of our homes with a generator. They not only installed it, but also came back periodically to refill it with gas. We're thankful EPB made it possible for them to stay in their home until power was restored.

National media clips

"How Chattanooga, is leveraging digital inclusion to open its innovation district to all."
- Brookings (Jan. 2020)

"Chattanooga's EPB takes quantum leap with test of new cybersecurity system."
- Associated Press (March 2020)

"In Chattanooga, the Gig has brought a renaissance."
- Inc. Magazine (Dec. 2019)

"Chattanooga rolled out citywide fiber a decade ago, which has become an economic driver."
- NPR Marketplace (June 2020)

"Project Voice, the No. 1 event for voice tech and AI in America, is officially making Chattanooga, Tenn., its permanent home."
- PR News Wire (Jan. 2020)



**Coming together
in crisis**



In aftermath of tornado damage, Smart Grid prevents 44,000 outages

On April 12, 2020, tornadoes ripped through the Chattanooga area devastating the community's electric and fiber optic infrastructure and necessitating an effort to rebuild the systems that cost more than \$34 million—the costliest restoration in EPB's history.

Initially more than 106,000 EPB customers lost power. Almost instantaneously, Chattanooga's smart grid began its automated processes which prevented about 44,000 customers from experiencing an outage that would have otherwise lasted hours or even days. This allowed EPB to immediately focus on repair efforts for about 62,000 customers who remained without power.

EPB began calling on mutual aid agreements with other utilities and quickly grew its workforce bringing in more than 1,500 utility workers from across eight states. Crews removed many tons of trees, debris, and damaged equipment before they began the massive reconstruction effort which included rebuilding and restoring three substations, 812 utility poles, 709 transformers, and 125 miles of power lines over a 65-mile span.

In addition, crews repaired seven fiber shelters, spliced 4,320 hair-width fibers to rejoin major feeders and transport cable, and replaced thousands of network access points and individual drops.

To keep utility workers wholly focused on these reconstruction efforts as they worked 16-hour shifts and sometimes around the clock, EPB established a major staging area and support station in the parking lot at Hamilton Place Mall. Utility workers could come to these locations to get the materials they needed along with a quick meal, so they could return to the job with as little downtime as possible. EPB employees who typically work in office positions continued to be responsible for their normal work while also volunteering to put out food, distribute protective gear, and coordinate the staging of reconstruction materials.

“When you count all of the utility crews we brought in along with all of EPB's regular employees who joined in restoration efforts, we were able to dedicate more than 2,000 people to the effort of restoring services to our customers,” David Wade, President & CEO said. “At a time when so many in our community were facing severe challenges, everyone at EPB shared a sense of purpose in helping our neighbors take the first steps toward reconstruction.”



Bridging the digital divide during the COVID crisis

When the COVID-19 crisis began, EPB knew many of our customers would be negatively impacted by the financial crisis caused by business closures and slowdowns. At the same time, we recognized that connectivity was even more important as students shifted to online learning to complete the school year and many adults transitioned to remote working. As a first step, EPB suspended disconnections and waived late fees to ensure customers could maintain the connectivity they needed for earning, learning, and maintaining some sense of normalcy in isolation.

At the same time, EPB looked for ways to extend internet access to families with children on free and reduced lunch. Through a partnership with the Benwood Foundation, Hamilton County Schools, the Enterprise Center, and the City of Chattanooga, EPB implemented a special program that provided new internet service to 523 families and continued service at no charge for 1,182 more for a total of 1,705 households, that gained and maintained internet service during the first weeks of the COVID-19 crisis.

EPB also worked with its community partners to rapidly install more than 130 free EPB Quick Connect WiFi Hot Spots in publicly accessible areas and housing developments across the community where many students do not have internet access at home. In addition, EPB included the Maclellan Shelter for Families and three Walker County Schools in the program. Among all of these locations, EPB Quick Connect WiFi accommodated more than 13,000 individual user sessions and carried more than 8.1 million megabytes of data in just three months.



Helping United Way of Greater Chattanooga raise \$500,000 for COVID crisis assistance

Recognizing that even as many companies suspended disconnections and evictions at the outset of the COVID crisis, many people might accrue months of bills they would have difficulty paying, United Way of Greater Chattanooga launched the “Restore Hope Fund” in March.

As an investment in economic re-growth in the Chattanooga area, EPB engaged TVA in matching donations to “Restore Hope” up to \$50,000. Many EPB employees committed to the campaign, some pledging to continue giving for up to six months. In all, community members, EPB employees, and local companies answered with generosity that far exceeded the amount required for the match. Total contributions to the effort exceeded more than \$510,000.

Every dollar donated to the Restore Hope Fund went directly to supporting individuals and families experiencing financial strain due to COVID-19. Through “Restore Hope” United Way connects people in need to a network of non-profit partners who can provide assistance with housing payments, utilities, and other basic needs.



**Pioneering
new technologies**



Chattanooga tops \$110 million in smart city research

Driven by the mission of enhancing quality of life and economic development for local customers, EPB has utilized the smart grid and community-wide fiber optic network as a smart city research platform. Working with our partners in the Chattanooga Smart Community Collaborative, we've helped bring in more than \$110 million in federally funded research. Efforts range from the development of home-based energy management systems that can interface with the community's smart grid and developing micro grids that can expand and shrink to make the most of solar energy to creating a mile-long Smart City Corridor along Martin Luther King Jr. Blvd. to test autonomous vehicle technologies.

MIT Economist Dr. Jonathan Gruber has taken notice of our Gig City. Chattanooga's Smart City Research was featured in his book "Jump-Starting America: How Breakthrough Science Can Revive Economic Growth" about the benefit of investing federal research dollars in middle America. In February, The Enterprise Center brought Dr. Gruber to Chattanooga. He left the city with a greater awareness of local efforts as he continues his presentations, writing and research going forward. "If I was here two years ago, Chattanooga would've been the centerpiece of the book," Dr. Gruber said. "The EPB smart grid is an illustration for the rest of the world of how to leverage government funding to create a public service that works for all."

Members of the Smart City Collaborative include EPB, the City of Chattanooga, Hamilton County, UTC, Erlanger, The Enterprise Center, CO.LAB, and the Tennessee Aquarium.



Locally developed accident prediction model wins national award

Our community is the home of groundbreaking research that uses artificial intelligence to predict where traffic accidents are most likely to occur—a breakthrough that won our community a National Smart City award from the International Data Corporation. The partners in the effort include the UTC Center for Urban Informatics (CUIP), the City of Chattanooga, Hamilton County, and EPB. Researchers at UTC created a computer model that accurately predicts when and where roadway accidents will happen based on historical emergency call center information, weather data and roadway geometrics.

EPB's fiber optic network allows datasets of this size to be processed quickly and efficiently. The model is being used by local officials to identify adjustments that can be made to reduce future traffic accidents. CUIP is planning to expand the project to include roadways that are outside the city limits, such as the surrounding interstates. Their goal is to research how cities can create happier, healthier, and safer futures for all.



Community named national Digital Inclusion Trailblazer

The National Digital Inclusion Alliance recognized the City of Chattanooga and Hamilton County in coming together as a Digital Inclusion Trailblazer, thanks to continuing partnerships and efforts among the city, county, EPB, The Enterprise Center and Tech Goes Home Chattanooga.

The National Digital Inclusion Alliance recognized 14 municipalities for promoting digital literacy and broadband access for underserved residents. Trailblazers are models for other local governments to pursue digital inclusion efforts in their own community.

“At EPB, our goal is to give the people in our community the power to do more whether they’re earning, learning, innovating, or relaxing,” said David Wade, president & CEO. “Chattanooga’s fiber-to-the-home network is a platform for helping people realize their full potential both educationally and economically.”

Other recipients of the Digital Inclusion Trailblazer award included New York, San Francisco, Boston, Seattle and Washington, D.C. Chattanooga was one of the smallest communities to receive this recognition.



Partnering with national researchers to secure America's electric grid

Among the many research partnerships between EPB and Oak Ridge National Laboratory (ORNL), one of the most important is an effort that could help secure the national electric grid by field testing Quantum Key Distribution. This is a groundbreaking technology which utilizes quantum physics to enhance encryption. In support of the project, EPB has developed a 21-kilometer fiber optic test bed which is completely separate from the operational portions of the local electric and fiber optic infrastructure.

In March, EPB hosted ORNL, the U.S. Department of Energy (DOE), Los Alamos National Laboratory, Brookhaven National Laboratory and Qubitekk for the latest round of demonstrations of how the technology operates in real-world conditions. DOE chose to partner with EPB as the only utility currently involved in the research because the community-wide fiber optic network and smart grid infrastructure is among the most advanced in the country.

“EPB is an incredible, progressive utility to work with on these projects,” said Duncan Earl, President of San Diego based Qubitekk. “I can’t even imagine working with any other utility.”



**Helping local companies
grow and adapt**



Supporting global data center track the spread of Coronavirus

When International Maritime Security Associates (IMSA) moved its operations center from Fort Lauderdale, Florida to Chattanooga in 2016, the company cited Chattanooga's advanced infrastructure as a major factor. The company provides ships all over the world with real-time information 24/7/365 including weather conditions, port closures, hotspots for piracy and much more. "I wouldn't want to operate our business anywhere but in Chattanooga," said Frank Fenner, COO of IMSA. "Having access to EPB's fiber optic network and benefitting from the reliability of the Smart Grid, makes what we're doing a whole lot easier."

This year the company has been tracking the spread of coronavirus for ships at sea. When COVID-19 hit China, Fenner said it caused delays for ships around the world which in turn caused a ripple effect that disrupted supply chains across the globe. "Everything is changing on a minute-by-minute basis," said Corey Ranslem, CEO of IMSA. "Ocean-going vessels are counting on us to provide them with the real-time information they need to keep cargo moving while ensuring the safety of their passengers and crew."



Fast growing Southtree credits fiber optics as competitive advantage

Named one of “America’s Fastest Growing Companies” by *Inc. Magazine* in 2016, Southtree credits EPB Fiber Optics for accelerating their service delivery and growth as they approach the milestone of serving their one millionth customer. The company is the national leader in converting analog photos, videos and mementos into digital media and making them accessible to customers via their cloud service.

According to Southtree Co-Founder Nick Macco, one of the reasons Southtree has grown so much is that EPB Fiber Optics provides ultra-fast upload and download speeds. “What used to take us two hours to upload, now takes us 45 seconds,” Maaco said. “A super-fast five gig line from EPB has given us the ability to dramatically increase our throughput.”

He also expressed appreciation to EPB for moving quickly to meet the company’s growing demand for electricity. “EPB came out and put in bigger transformers for us because this place draws so much power.”

Since Macco and his business partner Adam Boeslelager started the company in 2006 when they were students and Lee University operating out of their garage, Southtree has digitized more than two million videos and created more than three million DVDs. They have also grown to a company that now employs 200 people and ships 2,500 orders a week.

In addition to kudos from *Inc. Magazine*, Southtree was named “Best Memory Keeper” by *Good Housekeeping* magazine, and “A Must Have” by the ABC show *The View*.



Helping businesses continue operations during the COVID crisis

When the COVID crisis forced many businesses to rapidly adapt to new conditions including remote working, a greater reliance on internet-based interactions, and the need for more robust conferencing solutions, EPB Fiber Optics had the network capacity and the commercial solutions local companies needed.

According to Paul Ragland, Executive Vice President of Millennium Bank, EPB was there to help his company. “We needed to quickly deploy computers to employee homes so they could work remotely,” said Ragland. “With increased VPN access into our network, we needed to increase bandwidth to our internet connection. EPB was able to make all of that happen for us very quickly.”

EPB also worked with Hamilton County 9-1-1 to help them rapidly adapt to new demands during the COVID crisis. “Over the past couple of years the 9-1-1 District has added more cloud-based resources and the need for faster internet access was starting to become apparent,” said Seth Graham, Director of Technical Services for Hamilton County 9-1-1 Emergency Communications District. “With Covid-19, we have a number of administrative personnel working from home and connecting to our network via VPN. This exacerbated the bandwidth problem.”

Since the fiber optics infrastructure was already in place, EPB was able to provide Hamilton County 9-1-1 with a solution that doubled their internet bandwidth within hours of receiving the request.



Project Voice chooses Chattanooga as permanent home

As part of our mission to promote positive economic activity in the Chattanooga area, EPB has been working with Project Voice, America's #1 Voice Tech and AI conference, to hold the event in Chattanooga for the last three years. As the conference has grown, it has also firmed up its ties with our community resulting in the announcement this year that Chattanooga will be Project Voice's permanent home for the annual event in future years.

"Chattanooga – often referred to as 'Gig City' because of its high-speed gigabit network – is a continuously growing technology destination," said Project Voice Executive Producer Bradley Metrock. "Many tech businesses are looking to the city as one of the best Southern alternatives to Silicon Valley, Seattle, Boston or New York, so we're proud to help promote Chattanooga as a destination for tech companies and professionals."

EPB took a lead role in recruiting the conference to Chattanooga in 2018. This year we were the only local, presenting sponsor while national sponsorship skyrocketed through the engagement of Amazon, Google, Microsoft, Samsung and more. According to Metrock, thousands of innovative voice technology leaders and users representing a wide array of industries were impressed by our community and went home to tell their friends about what's now become a "not so secret" start-up spot in the South.

EPB also hosted EPB Developer Day and invited local college students and developers to take advantage of a free day-pass to attend the conference where they could learn from industry leaders and make career connections.



**Enhancing the
customer experience**



Providing customers with internet for the device age

Over the last year, the number of EPB Fiber Optics customers benefitting from fiber optic connectivity and particularly Gig internet speeds continued to grow. The total number of subscribers to EPB Fiber Optics services now tops 110,000 households and businesses with about 27% of all EPB Fiber Optics Fi-Speed Internet customers subscribing to Chattanooga's world-famous Gig speed. "Our customers see particular value in our fiber optic internet because this is the only local service that offers uploads and downloads at the same fast speeds," said Sandra Tilley, Senior Vice President of Brand Strategies. "As more people rely on their internet connection for working and learning, they are also utilizing more and more internet connected devices. EPB's Fi-Speed Internet and particularly the Gig offer world-class speed that can reliably support all of the internet needs of a family or business."

More customers are also subscribing to EPB Smart Network's professionally installed WiFi service. "Our customers want to use multiple devices at the same time for watching TV, video chatting, and gaming, and they want to use these high-bandwidth applications throughout their home without having to think about wire-line connections," Tilley said. "EPB's expert installers ensure that EPB Smart Network customers have the coverage and continuing technical support they need without having to worry about installing and troubleshooting their own network."



EPB Fi TV takes off

In July 2019, EPB Fiber Optics launched the new EPB Fi TV platform based on rigorous customer research, and customers responded enthusiastically with the total number of subscribers growing to more than 11,400 in just 12 months. “The way people want to view video content has changed,” said Sandra Tilley, Senior Vice President of Brand Strategies. “It is no longer about linear television or appointment TV. Consumers want to watch what they want, when they want and where they want. They want to watch it on all their devices and not be tethered by wires.”

The new EPB Fi TV pairs the world’s fastest internet with the ability to watch TV using many popular streaming devices, mobile phones, tablets and computers that customers may already own without having to lease set top boxes on a monthly basis. “EPB customers who were leasing two or more set top boxes could actually save money by switching to the new EPB Fi TV and premium features like Replay and Restart are included with the service at no extra charge,” Tilley said. Subscribers could also add Unlimited DVR for just \$5 per month and store as many recordings as they want for a set period of time. “The new EPB Fi TV is a customer-driven product,” Tilley said. “Customers wanted to watch anytime, anywhere without having to lease set top boxes or switch inputs. The new EPB Fi TV delivers on all of these features customers want.”



**Preparing students for
the jobs of the future**



Helping students become Future Ready

For the last two years, EPB has partnered with Tyner Academy through Hamilton County Schools' Future Ready Institutes program to support workforce development. This past year Tyner students were welcomed back to school with a new learning laboratory at the EPB Institute of Technology and Networking. EPB employees and local businesses worked together to transform their classroom over the summer from floor to ceiling, fixtures to furniture.

"The goal of Future Ready Institutes is to prepare students for well-paid, in-demand jobs so they can succeed in the workplace while driving growth for our local economy," said Dr. Bryan Johnson, Hamilton County Schools Superintendent. "These partnerships lead to exciting career opportunities that benefit our graduates, their families, and our community as a whole."

The high-tech learning lab now includes a glass-walled area with computer server racks for project-based learning, a smartboard that can show information on large-screen displays throughout the classroom, an area where students can use their Chromebooks for computer work like coding and more. Every element was designed to support students as they work to join Chattanooga's next generation of IT and networking professionals with the help of Hamilton County educators and EPB Technology experts.

"A year ago, I wasn't thinking beyond high school," said Tyner student Christopher Hampton. "Being a part of the Future Ready Academy and working with EPB has me thinking about going to college and working in the IT field."

Students also have field trips to EPB throughout the year to tour our Control Center and Operations Center and learn about our Smart Grid, fiber optics, Solar Share, and other technologies.



Engaging students in international cybersecurity tournament

As part of EPB's commitment to helping today's students prepare for tomorrow's jobs, we hosted fifteen students from Chattanooga Girls Leadership Academy (CGLA) as they gathered to represent Chattanooga in an international cybersecurity tournament called MAGIC Capture the Flag.

Prior to the competition, EPB volunteers led the students in completing a computer coding curriculum. "We taught them coding languages like Java Script and Python along with other technical skills," said EPB Systems Engineer Blair Brown. "Many of these students had never considered a career in technology before. Now, they're realizing that they can learn skills that will open many new opportunities for them."

The competition consisted of solving a series of computer puzzles that simulate the skills required for technical professions. CGLA students competed with schools as far away as Estonia. The event was organized by the Mid-Atlantic Gigabit Innovation Collaboratory to enhance workforce development for technology companies and engage young women who are under-represented in tech fields.



Protecting Chattanooga's natural environment



EPB building earns LEED Gold for environmental sustainability

In November, EPB earned the Leadership in Energy and Environmental Design (LEED) certification at the Gold level for an existing building.

The certification reflects EPB's successful efforts to dramatically reduce its environmental impact through energy efficiency, reduced water use, diverting waste from landfills through composting and recycling, and other measures. LEED, developed by the U.S. Green Building Council, is the most widely used green building rating system and a symbol of international excellence.

"EPB has shown tremendous leadership in making its own operations more sustainable while providing environmental expertise and sustainable energy options like the Solar Share community solar program to its customers," said Rhiannon Jacobsen, Vice President, Market Transformation & Development at the U.S. Green Building Council.

Over the last year, EPB:

- Reduced water use by 1.4 million gallons (equivalent to 2.08 Olympic-sized pools)
- Reduced energy costs by \$8,250 (82,500 kWh avoided)
- Reduced total landfill waste by 63% (62,500 pounds of recycling and compost)

EPB celebrated the announcement by hosting the EPB Green Business Expo to share expertise and resources with other local companies interested in enhancing their sustainability and optimizing their operations.



America's first carbon-neutral MiLB Game powered by EPB's Solar ShareSM

The Chattanooga Lookouts became the first minor league baseball team in America to play a game that was 100 percent carbon-neutral, powered through locally-generated solar energy credits provided by EPB in partnership with TVA. The Lookouts wore special jerseys for the "Green Power Night" home game against Montgomery in August 2019.

"The Lookouts strive to be an environmental leader in minor league baseball, and we're proud to have local partners like EPB and TVA help us make history on Green Power Night," said Chattanooga Lookouts President Rich Mozingo. "Chattanooga is our home, and every effort to help clean up the air we breathe creates a better fan experience while adding value to the community we love."

EPB's Solar Share, which is Chattanooga's only community solar installation, powered the game. Solar Share panels located along Holtzclaw Avenue provided solar energy credits to generate the 2,500 kilowatt hours needed to power a game and support operations. This solar energy credit was equivalent to 1.98 tons of carbon.