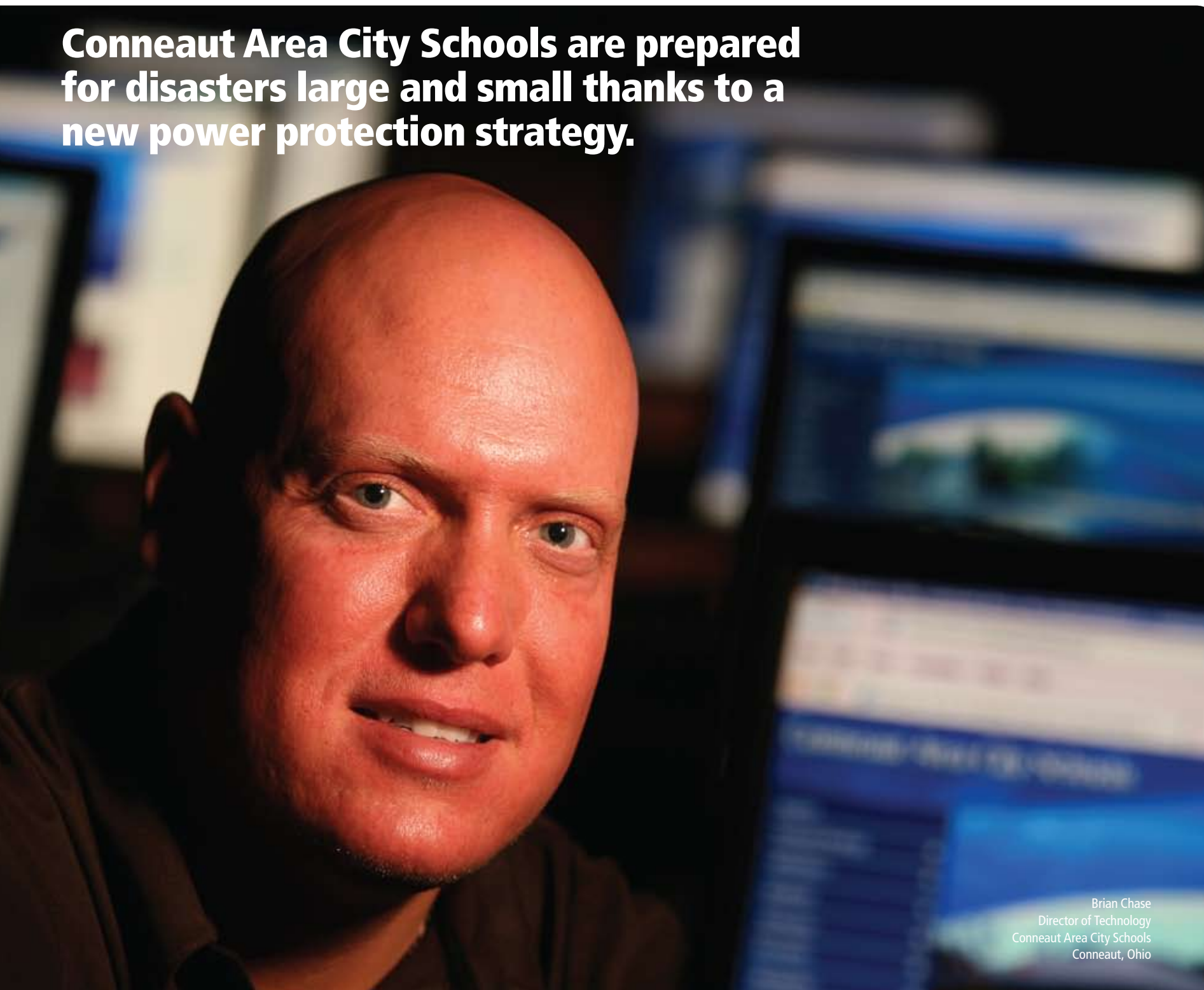


# Weathering the Storm

**Conneaut Area City Schools are prepared for disasters large and small thanks to a new power protection strategy.**



Brian Chase  
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If it's good enough for the Boy Scouts, it's good enough for Conneaut Area City Schools (CACS). Heeding the wise words of the famous Boy Scout motto "Be Prepared," the Conneaut, Ohio, district recently implemented a comprehensive power protection solution designed to keep all of its critical systems fully operational in the event of a disaster — or even during a momentary power glitch.

Indeed, it doesn't take a Category 4 hurricane, a terrifying twister or an overtaxed power grid to wreak havoc on sensitive IT equipment. Recognizing that even relatively minor power fluctuations can cause serious damage, Brian Chase, CACS director of technology, opted to deploy a dozen Tripp Lite uninterruptible power supply (UPS) systems, which deliver continuous, conditioned power to Conneaut Schools' data center equipment.

## Weather Woes

Because of its close proximity to Lake Erie, the 2,400-student district's most imminent threats are fierce winter storms that can disrupt its computer and communications devices, as well as other key network infrastructure.

"When these storms hit our area, it is not uncommon to have mass power outages that range from a day to a week," explains Chase. "It was crucial to have a system in place that could withstand the rigors of power fluctuations and provide a means to condition power surges and outages gracefully."

The district found the solution it was seeking in Tripp Lite's SmartPro and SmartOnline rack-mount UPS lines. Implemented last fall, the districtwide UPS deployment spanned all four of its schools plus the administrative building. Included in the preparedness plan were 10 SmartPro units, ranging from 750VA to 2200VA, that primarily protect the district's switching gear.

Additionally, the two SmartOnline UPS systems, a 6kVA and an 8kVA model, safeguard its data center, which houses more than 13 servers and seven network attached storage (NAS) devices containing more than 18TB of data, as well as a variety of storage area network (SAN) arrays, PoE switches, IP PoE video cameras and robotic tape backups.

## Infrastructure Protection

"All of this equipment helps support student services, fiscal services, staff and students," says Chase. "Downtime is not an option when you are as integrated as we are."

In addition to protecting the data center equipment, the Tripp Lite UPS systems also provide backup power to the district's IP telephony system. "Communication is crucial in emergencies, so this solution helps maintain the infrastructure during such events and keeps us in contact in the event of an emergency," Chase points out.

"Because our district is so technology-oriented, it is critical that we're not put in a situation where we lose our ability to use our equipment," echoes CACS Superintendent Mary Zappitelli.

"We are proud of the strides we have made in the area of technology in the last few years. Our technology department does an outstanding job of keeping our systems up and running in an effective and efficient manner, [and] putting the UPS deployment in place is another example of their diligence."

When the district began to address the issue of disaster preparedness, one of its chief concerns was finding a way to thwart downtime resulting from the region's frequent blackouts and brownouts.

"Our core technology areas in the buildings are equipped with generators, but we needed to find a solution that would condition the

power and maintain a seamless transfer of power in a power outage,” explains Chase, who has worked for CACS for eight years.

“In our district, our mission is to provide a reliable infrastructure that can sustain everyday power functions,” he adds. “Our disaster preparedness plan required that we have redundant power support to all core equipment in the event of a power failure.”

### Seeking a Solution

After thoroughly investigating a variety of power protection options from multiple vendors, the district settled on the Tripp Lite solution, which proved to be an ideal fit for many reasons. “First and foremost, the product that was offered met all our needs when looking for a power backup system and line power conditioning,” reports Chase.

The UPS systems also achieved another key requisite for the district: affordability. “As many of us in the schools realize, our budgets never seem to get any larger, so of course cost was an issue,” Chase explains. “Because of

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our concerns for needing a quality power backup system and reducing costs, the Tripp Lite solution seemed to be a good fit.”

Tripp Lite’s SmartOnline UPS systems provide a level of power protection for mission-critical applications, completely isolating connected equipment from all power problems including blackouts, brownouts, surges, line noise and harmonic distortion. Making use of true online double-conversion technology, the UPS continually converts incoming AC power into DC power, and then re-synthesizes it back into normal AC power.

The SmartPro UPS product line uses line-interactive technology to provide power protection and control to equipment such as servers, data centers, VoIP/telecom and networking devices. The units’ advanced Automatic Voltage Regulation (AVR) constantly monitors incoming voltage and “trims” or “boosts” the voltage to supply consistent power without draining the batteries.

In addition, SmartPro UPS systems provide surge suppression to safeguard against damage from spikes and line noise.

### A Solution to Suit Their Needs

Another reason the Tripp Lite systems proved to be an optimal fit for CACS was that they allow sufficient time

for the district’s backup generators to come online, notes Chase. “When we were searching for a solution, we had matched the backup equipment based on a minimum 15-minute draw of power,” he explains. “This was needed to make sure that we had no outages while backup generation systems were starting.”

In addition to pairing the UPS systems with the appropriate applications and loads they would be required to sustain, the 6000VA and 8000VA units were supplemented with multiple 192V and 240V external battery packs to accommodate the data center load.

“The products we implemented complemented the PoE power draws and our data center needs,” says Chase.

Because the district was also seeking monitoring capabilities, it chose to add Tripp Lite’s SNMP Web Card, which allows network users to operate any expansion slot-equipped UPS as a managed device on the network. Enabling remote monitoring and control of UPS systems, the card also provides remote viewing of site electrical data, UPS status information and self-test logs.

When used with customized load management receptacles available on select Tripp Lite UPS systems, the SNMP card also supports selective rebooting of locked network equipment without disrupting power to other devices.

Chase also appreciates the device’s IP-based management and notification. “The device will send out system-based messages as to the status of our backups via e-mail,” he says. “In addition, it simplifies the configuration of the backup system.”

### Service and Support

Beyond the product capabilities and attractive pricing of the UPS setups, Tripp Lite earned an A+ for the level of service and support the company provided during the district’s assessment, according to Chase. “It was outstanding,” he reports. “All the reps that worked with us on this project exceeded expectations, and they always got me the answers I needed to make informed decisions as they came up.”

For example, after successfully deploying the SmartPro units to their respective locations, Chase encountered some issues while attempting to install the SmartOnline UPS systems within the data center. Tripp Lite went above and beyond to resolve the glitch.

“After calling Tripp Lite and explaining the problem we were having, they responded immediately,” Chase recalls. “Not only did they take care of the issue, they sent a technician to finish the install for us onsite.”

This degree of commitment proved invaluable to Chase. “A true test of a product manufacturer is how they stand behind their product and the support they give after the purchase,” he says. “Tripp Lite stands high in this respect. They were calling me; I did not have to call them repeatedly to make sure everything was implemented as designed. They made our deployment go smoothly, and were there when we needed them.”

### Service from Start to Finish

Chase has been equally impressed with the level of service extended by CDW•G. “Our account manager, Henry Castro, has been outstanding in obtaining any information

we’ve needed for all of our projects here in our district,” he reports. “I’ve found him to be very knowledgeable on just about all aspects of our network.”

Indeed, CDW•G provided the district with assistance and resources from the disaster preparedness project’s inception through its completion. “Our CDW•G rep assisted me by getting our technology department in touch with Tripp Lite power management specialists,” notes Chase.

“We had given them a detailed listing of all our equipment, and they did the research to make sure we were ordering the exact equipment that we needed for our backup power needs.”

When additional information was required, Castro initiated the appropriate contacts and set up all the meetings. “This alone has made our experience with CDW•G an enjoyable one,” says Chase. “Henry has been a solid asset in our technology integration and a reliable associate.”

### Passing the Test

Meanwhile, the Tripp Lite solution has successfully endured its first Conneaut winter, during which multiple outages plagued the area, including one that left some areas without power for more than a week. But when potential disaster was bearing down on it, the district was sufficiently prepared.

“During this time, the power was up and down several times during the week. I can say with a sigh of relief that the backups all did their respective jobs, and our mission-critical systems did not sustain any damage due to


power fluctuations,” Chase reports. “It’s not uncommon to have power outages in our area, so it is comforting as a technology director to know our systems are protected in the worst of times.”

In addition to helping Chase sleep better at night, the district’s disaster preparedness plan is earning high marks for its return on investment (ROI). Noting that all education departments seek a solid return on their investment, Chase points out that the UPS systems are serving a dual purpose within the district: not only providing battery backup, but also existing as an invaluable insurance policy for its sensitive — and expensive — electronic equipment.

“In some cases, the ROI is knowing that because of the power backups we did not lose equipment,” he explains. “In massive outages such as those we sustained this winter, equipment damage is always a possibility. The associated cost with replacing parts and system downtime has a larger cost than the whole power backup system we implemented. For the damage the system averts, it is worth the associated cost.”

In the end, the district’s ability to prevent downtime and survive the threat of potential disaster lies in the fact that it has taken the time to adequately prepare.

“I believe that if you plan to protect yours systems, you not only will save yourself in cost but also in downtime,” says Chase. “Pay now, or pay later. The cost for paying later is much higher, and with a small staff, not one I wish to contend with.”

“Data loss and system downtime is not an option in our type of environment,” he emphasizes. “So our ROI comes in knowing that we weathered the storm,” — literally. 

## How Expensive and Prevalent Are Power Problems?

No matter how you assess it, downtime carries an enormous price tag. Electric Power Research Institute (EPRI) estimates the national cost of power interruptions at approximately \$80 billion per year to U.S. electrical customers, with momentary interruptions accounting for two-thirds of the total cost, at \$52 billion.

Further research suggests that power outages are responsible for the U.S. economy losing between \$104 billion and \$164 billion each year, while power quality issues are blamed for another \$15 billion to \$24 billion in losses, according to EPRI.

Even more distressing, the downtime annual average for the utility grid in the United States is currently eight hours and 45 minutes. The good news is that with onsite generation equipment and UPS solutions, this downtime can be reduced to the equivalent of five minutes and 15 seconds per year.

In fact, it may come as a surprise that more than two-thirds of downtime events stem from preventable causes, according to a 2007 study on the root causes of load losses by Eaton, an electrical systems and components company.

To find technology products related to this article on disaster preparedness, please see pages 2 and 8 of this catalog or visit [CDWG.com/power](http://CDWG.com/power).