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A Year of Expansion and Progress

The theme of the 2019 Special Districts Program — faster, smarter, safer — underscores both the opportunities and hurdles facing special district leaders. New technologies and techniques will enable districts to deliver unprecedented service and value to citizens and other stakeholders. But with technological change accelerating at an unsurpassed rate, special districts must move faster than ever before — often on tight budgets and scarce resources.

Key takeaways from the program:

- Growing connectivity and emerging technologies like the Internet of Things and predictive analytics promise to give special districts new insights and opportunities.
- Cybersecurity and infrastructure continues to be a major concern for special district leaders.
- New technologies and services are becoming targets for cyber crooks as they automate functions and collect and store more data.
- Smart, safe districts are facing special district leaders.

As a result, the meetings tackled a series of job-critical issues for special district leaders — with cybersecurity topping the list of pressing concerns.

AT&T Principal Architect David Leach warned attendees at the Midwest Regional Summit in Chicago that special districts are becoming bigger targets for cyber crooks as they automate functions and collect and store more data. At the same time, powerful software weapons are becoming readily available to attackers.

“Those who have them — like ransomware — are using them to extort ransom from entities,” he said.

The tools are easy to get on the dark web. You can basically buy an attack with bitcoin,” he said.

Leach and other AT&T security experts partnered with representatives from the federal Cybersecurity and Infrastructure Security Agency (CISA) throughout 2019 to explain evolving security risks and publicize free Cyber Resiliency Reviews offered through CISA’s Cybersecurity Advisor Program.

The free reviews can be an important starting point as districts work to understand and address security vulnerabilities, giving them a roadmap for further risk mitigation activities.

“It’s really a policy and risk management issue,” Leach explained. “You need to figure out which data is most critical and then how you are going to protect it.”

Urgency around safeguarding critical data and systems is reflected in the results of our 2019 Special Districts Survey, where special district leaders ranked cybersecurity as their top technology priority.

The survey also revealed other pervasive challenges for special districts, including:

- Modernizing systems and processes, building and maintaining skilled workforces, and improving disaster recovery and business continuity.
- Service and value to citizens and stakeholders.
- Data analytics are two of our most sought-after skills.

As districts transform themselves, they must understand and mitigate risks created by new tools and services, as well as an increasingly hostile threat environment.

The Special Districts Program was created in 2017 to help special district leaders navigate issues such as these. This national initiative, an AT&T program with Government Technology, created a community to inform and support the needs of the nation’s 38,000 special purpose government districts.

The program connects and informs special district leaders through live regional summits, a national awards program, monthly newsletters, podcasts and more — all designed by special districts for special districts. In 2019, the Special Districts Program concentrated on providing more opportunities for special district leaders to share ideas, expertise and best practices.

JOB-CRITICAL INSIGHTS

Attendance at the program’s five regional summits tripled over 2018, providing an even bigger platform for in-person networking and collaboration. In all, leaders from nearly 250 special districts nationwide attended the programs’ day-long live sessions in 2019. New regional advisory boards gave local special district leaders a direct role in shaping the content of these meetings. Along with the program’s existing national advisory board, the new regional boards ensured program activities reflected local priorities.

Throughout 2019, the Special Districts Summits provided a forum for district leaders to share real-world approaches for addressing these and other issues.

Tyrell Morris, executive director of the Orleans Parish Communications District, explained how he’s using low-code application development to eliminate paper processes and launch new digital services.

The district — which handles 911 and 311 calls in the city of New Orleans — initially used low-code development tools to digitize the process employees use to request vacation time or pick up extra shifts. Subsequent low-code projects have eliminated 90 percent of its paper processes, Morris said.

“Finding the right talent is probably the biggest challenge we have in IT right now,” Mao told attendees at the West Regional Summit in southern California. “Cybersecurity and data analytics are two of our most sought-after skills.”

The transportation authority is addressing its need for analytics expertise by teaching existing employees to use data tools. For
And we’re increasing employee Regional Summit in Philadelphia. attendees at the Northeast to use their skills,” Klotz told dramatic impact on its employees. authority’s customers and had a brought new services to the cloud-based electronic document GIS technology, and implement money to digitize existing maps and citizen portal software. The modernization initiative brought new services to the authority’s customers and had a dramatic impact on its employees. “We’re freeing up our staff to use their skills,” Klotz told attendees at the Northeast Regional Summit in Philadelphia. “And we’re increasing employee satisfaction with the ease of work.”

PREPARING FOR THE FUTURE
Along with addressing today’s challenges, the 2019 Special Districts Program focused on helping district leaders prepare for the future. Multiple summit sessions explored the impact of evolving customer service preferences and rising citizen expectations around privacy. One prediction was that fewer citizens will access public sector services through traditional government websites. Instead, they’ll rely on third-party platforms like Amazon Alexa or Google Home to interact with special districts and other government agencies. In addition, new private companies are creating business models around expending government services. California-based YoGov helps citizens with DMV services in more than 20 states, for example. The firm even provides “concerners” who will wait in line for citizens at the DMV office.

As these trends evolve, more citizens will interface with government through channels that aren’t controlled by government. Special district leaders will need to work with these new entities, within appropriate policy frameworks, to give citizens more convenience and better access to services. “Build your technology platforms and infrastructure to support these third parties, — don’t see them as a threat,” recommended Government Technology Chief Innovation Officer Dustin Hastedt during the Northeast Region Summit in Orlando, Fla.

Privacy is undergoing a similar evolution, spurred by the European Union’s 2018 implementation of the General Data Protection Regulation (GDPR) that gave citizens more control over their personal data. The GDPR prompted legislative activity in the U.S. — including broad new data protections enacted by Colorado and California — which is changing how special districts must approach privacy.

Ultimately, privacy will move beyond simple opt-out features on apps and website disclosure notices, experts told attendees at this year’s summits. Meeting these evolving privacy standards will demand that districts build compliance measures into almost everything they do.

RECOGNIZING EXCELLENCE
The 2019 Special Districts Program recognized the efforts of innovative districts and shared best practices nationally. We honored more than 40 districts and individual leaders with Technology Innovation Awards throughout the year for improving citizen services and strengthening internal operations. Award winners include the Bonita Springs Fire Control and Rescue District, which found an innovative solution to a longstanding problem improving radio coverage for firefighters inside buildings.

Public safety radio systems typically struggle to provide adequate indoor coverage, making it difficult for firefighters to use portable radios once they enter a structure. To combat the problem, the district installed radio repeaters on its fire trucks, paid for by a fee on new construction. The truck-mounted technology strengthens the radio signal inside a structure when firefighters arrive at the scene of an emergency, said district Technology Manager Jim Kaufman.

Other winners such as Southwest Transit in Minnesota and Norwalk Transit in Connecticut are delivering new convenience for citizens. Electronic, on-demand microtransit services that let customers request a pick up and drop off using a mobile app. As a result, both districts have seen significant ridership increases. For Southwaste Transit, those gains have topped 40 percent annually since it unveiled the microtransit service four years ago. These are just a few of the good ideas that earned national exposure through the 2019 Technology Innovation Awards Program. The work of these and other forward-thinking districts underscores why we created the Special Districts Program and continue to expand and enhance its activities.

PLAYING A VITAL ROLE
Put simply, special districts are critically important to the success of our communities and our nation. They operate power grids, drinking water and wastewater systems, airports, seaports and other critical infrastructure. They provide fire and rescue services, as well as transit and transportation. They operate libraries, parks and recreation facilities, and affordable housing programs. The performance, reliability and resiliency of special districts impacts all of us.

As former Philadelphia Mayor Michael Nutter pointed out during the Northeast Regional Summit, their unique structure empowers them to tackle issues that can be difficult for conventional government entities to address. “I find it so interesting about special districts services are they now have more flexibility and speed than traditional government,” he said. “An active engagement and partnership with the local government is critically important to the life, liberty and pursuit of happiness of citizens.”

— Former Philadelphia Mayor Michael Nutter

instance, one of the authority’s business analysts recently transferred to Main’s IT team and was trained on data visualization software. In addition, the IT group is training employees in other departments to use reporting tools, enabling them to produce their own data reports.

And Jonathan Klotz, executive director of the Mount Pocomo (Pa.) Municipal Authority, demonstrated how even small districts can improve user experience.

Until last year, the small water and wastewater district was overflowing with paper maps and documents, and it lacked electronic payment options for customers. Klotz worked with the nonprofit Rural Community Assistance Partnership to secure $15,000 to fund a grant package for technology upgrades, using the money to digitize existing maps and blueprints, deploy modern GIS technology, and implement cloud-based software for electronic document and citizen portal software. The modernization initiative brought new services to the authority’s customers and had a dramatic impact on its employees. “We’re freeing up our staff to use their skills,” Klotz told attendees at the Northeast Regional Summit in Philadelphia. “And we’re increasing employee satisfaction with the ease of work.”

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Almost all special districts have a role to play during major emergencies — and district leaders should address communications resiliency before disaster strikes.

Bruce Moeller, former fire chief and city manager of Sunrise, Fla., urged special district leaders to consider joining FirstNet, the dedicated national communications network for first responders. Many special districts qualify for FirstNet as extended primary respondents under the National Incident Management System (NIMS) framework.

Moeller, who dealt with Hurricanes Andrew and Katrina as a city official, said he routinely needed help from special districts when responding to major events. FirstNet ensures they can reliably communicate with other government agencies to assist in the response.

“I have often coordinated with special districts when handling a disaster,” said Moeller. “Transit districts, water districts, airport districts — I’ve needed all of these specialties. I’ve had to call buses in at 2 a.m. to transport people from damaged buildings; I’ve had to house people in libraries.”

His advice to special district leaders: Explore options to improve communications reliability and resiliency now. “You can’t wait until an event happens,” he said. “You need the capability to talk to other first responders. In a crisis, we all need to be able to work together.”
Our annual awards program recognizes special districts and their leadership for their future-forward uses of technology. This year more than 40 districts and leaders were honored for improving citizen-facing services, strengthening internal operations and providing exemplary leadership. Here are our 2019 award recipients.
The Solution
Resource and budget challenges are driving new technology approaches. Special districts are using as-a-service solutions, IoT and mobility to become more efficient and effective. They’re also focused on deploying these and other technologies securely as cyber threats escalate.

The Challenge
Old infrastructure, insufficient workforce talent and tight budgets stand in the way of progress for many special districts.

- **56%** say infrastructure modernization is a significant challenge
- **43%** don’t have the workforce they need
- **42%** lack the funds or resources to pursue innovation

The Numbers
Our annual survey of special district leaders indicates these organizations are planning for the future — but they’ll need to overcome significant hurdles on their journey.

- **38%** are prioritizing cybersecurity
- **74%** are evaluating as-a-service offerings to modernize their infrastructures
- **36%** are using IoT tools
- **50%** are becoming mobile ready
Moving Toward a Smarter Future

The top 100 power utility districts spend an estimated $372 million annually on technology, according to GovTech Navigator, which tracks public sector IT spending. Regulatory trends are pushing utilities to strengthen power grid reliability while integrating new energy sources such as solar and wind. These pressures drive growth of IoT-powered smart grid initiatives that monitor performance of crucial equipment and increasingly use analytics and machine learning to improve maintenance and predict failures.

DISTRICT FOCUS

Los Angeles Department of Water and Power

In Los Angeles, the nation’s largest municipally owned utility is working toward a future that includes smart electric meters, data-driven decision-making and perhaps even blockchain-enabled solar energy marketplaces.

The massive Los Angeles Department of Water and Power (LADWP) provides energy to 15 million customers across a 465-square-mile service area. Louis Carr, CIO of the utility, says LADWP is planning a series of technology upgrades to its power grid and internal business systems to ensure reliability, roll out new services and keep pace with a rapidly changing power industry. One of the biggest projects on the horizon is an automation initiative that will add IoT-connected sensors to LADWP’s power distribution system. These devices will strengthen the utility’s ability to manage voltage levels on transmission lines and monitor the performance of transformers and other critical power transmission equipment. “As you can imagine, if we have near real-time tracking of line voltages and how much power’s going into and coming out of distribution stations, we can optimize and improve reliability,” says Carr. “Those sensors will help us be more proactive in terms of operations and maintenance, but also in terms of response when something goes south.”

Distribution system upgrades, which are in the planning stage, will form the foundation for a future rollout of smart power meters to LADWP customers. The utility already leads a regional smart grid demonstration project, dubbed Smart Grid L.A., that’s testing smart meters and other technologies. The goal is to help customers better manage their power usage and provide operational insights that will enable LADWP to meet the city’s growing energy demands. Concurrent with these growing smart grid activities, LADWP is strengthening security. The utility is adding both equipment and personnel to safeguard the power grid, as well as its networks and critical internal systems. Carr says tougher security measures go hand-in-hand with LADWP’s expanding IoT deployments to address potential vulnerabilities created by the highly connected environment.

INVESTIGATING INNOVATIVE SOLUTIONS

Demand for stronger network security — as well as greater scalability and flexibility — will grow industry-wide as utilities deploy intelligent, IoT-connected technologies, says Lea Santoro, Regional Sales Director, AT&T Public Sector. She predicts that lack of capital for new hardware and scarcity of staff expertise will push utilities and other special districts toward innovative grid modernization and security approaches.

“One of the things that we’re talking to these organizations about is providing network capabilities as a service,” Santoro says. “It lets them modernize and add capacity without buying more hardware. And it reduces the network support burden on internal staff so people can be redeployed on other tasks the organization needs.”

Network services also include intelligent software tools that let organizations adjust bandwidth on the fly based on customer-defined business rules around cost, consumption and other factors. Ultimately, these tools help deliver network capabilities that are more flexible, scalable and cost-effective than traditional approaches.

NEW SKILLS AND SYSTEMS

Addressing a staff skills gap is a key concern for LADWP’s Carr, as is modernizing the utility’s core technology systems to ensure they are both reliable and secure. “We have a number of employees retiring now, and in a perfect world their replacements would have almost the same level of knowledge and experience,” says Carr. “But instead, we’re losing people with 20 or 25 years of experience and their replacements might have five years of experience.”

LADWP is working to close the skills gap by focusing on staff development and training. The utility brings in outside training experts to help staff with fewer years of experience. In addition, Carr is upgrading and standardizing mobile technology that supports LADWP Field staff and remote workers. Those efforts include replacing outdated, utility-specific equipment with industry-standard mobile devices and software.

“We’ve had specialized computers for field crews and now we’re moving toward Windows-based laptops and tablets,” says Carr. “Standardizing on one operating system will greatly simplify security and management.”

A major upgrade of LADWP’s customer billing system also is underway. And the utility will replace its enterprise resource planning (ERP) system to modernize its budget, payroll and human resources applications.

Looking further into the future, Carr envisions the potential use of blockchain — the secure digital ledger technology — to manage an emerging consumer-driven marketplace for solar power. As more homeowners and businesses install solar panels, traditional power consumers also are becoming power generators. Carr says utilities such as LADWP must prepare for the implications of this trend.

“We may become the infrastructure that people use to create commerce around their energy,” he explains. “I can see blockchain being a technology that will help us audit and track those transactions.”

Ultimately, LADWP and other energy utilities must keep up with changes in the marketplace, whether it’s supporting green power generation, constructing smarter energy grids or enabling mobile employee, says Carr. “In this industry, the technology is changing every day, and we need to stay on top of it.”

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— Louis Carr, CIO, Los Angeles Department of Water and Power
There are more than 3,500 water utilities delivering drinking water in the United States and another 1,900 special districts focused on wastewater. The nation’s 100 largest public water utilities spend a combined $356 million annually on information technology, according to GovTech Navigator data. Annual IT spending for the top 100 wastewater districts is projected at more than $61 million. Regulatory demands are driving interest instead of reactive,” says Jeffrey Small, CIO for the authority, which provides wholesale drinking water service to 127 municipalities in southeastern Michigan and provides wholesale wastewater service to more than 70 communities, including the city of Detroit.

A key part of GLWA’s transition is the creation of an Enterprise Asset Management Systems Team within Small’s IT organization that combines expertise on asset management, GIS and business intelligence. Pulling together these capabilities will enable GLWA to collect more and new types of data — and present that information in meaningful and actionable formats. One important goal of the initiative is to improve GLWA’s predictive maintenance, says Small.

The authority’s infrastructure includes treatment plants, pumping stations and thousands of miles of underground pipe. By collecting and analyzing a growing amount of operational data from its infrastructure assets, GLWA can better detect early signs of failure and improve maintenance strategies. “We collect data on our pumps, for example: how hard they’re working and how much electricity they’re using. That information can tell us if a pump is no longer operating at peak efficiency,” says Small. “Which has cost implications and potential future failure implications.”

In addition, GLWA is piloting the use of robotic probes that travel through underground pipes to give the authority better insight into the condition of hard-to-reach assets. “Unlike a pothole in a street, you can’t see our infrastructure. You can’t see a problem until you have a major issue,” Small says. “It’s much cheaper to refurbish a pipe that’s in fair condition than to replace a pipe in poor condition — or even worse, spend significant dollars if it fails and causes a break.”

Along with collecting and analyzing more data, GLWA is increasingly using GIS maps to put information into meaningful context for stakeholders. These maps accurately plot the location of water and wastewater infrastructure, some of which has been in the ground for decades. They also communicate operational conditions to staff members, partner agencies and others. “Many of our efforts are asset management focused, but they’re all more than asset management,” Small says. “We need to be able to tell the story of our assets to internal and external stakeholders. GIS will be our storyteller.”

NEW PRESSURES ON NETWORKS

As water and wastewater utilities become more data-driven and predictive, they’ll put new demands on their networks, says Joyvan Blackwell, Client Solutions Executive, AT&T. These organizations will gather more data from more sources as IoT-connected sensors proliferate. They’ll also collect new and potentially more bandwidth-intensive types of information. And they’ll need to interpret this information and make decisions on it quicker.

Network technologies like 5G will offer capabilities — faster speeds, greater bandwidth and built-in intelligence — to support these evolving requirements. For operators of critical infrastructure, 5G will provide better support for applications such as video surveillance or monitoring of water quality, says Blackwell. Not only will 5G deliver greater bandwidth, it will speed up analysis of security video or water quality data by moving processing power to the edge of the network. “5G’s greater throughput and ability to support edge computing will greatly reduce latency in these types of applications — and that’s going to be important,” says Blackwell.

“These capabilities also will help water utilities collect and interpret new types of operational information, such as acoustic data from sensors in pipelines to assess conditions and spot potential leakage. “We’re on the verge of a huge increase in IoT devices and applications,” says Blackwell. “And 5G will be one of the main enablers of that.”

Besides advances in wireless connectivity, water utilities will demand more from their enterprise networks as they move business systems to the cloud. This shift will put even greater emphasis on network scalability, reliability and security. The combination of software-defined enterprise networks and 5G — which is designed to integrate seamlessly with enterprise wired networks — will give organizations new flexibility around how they design their networks for both performance and redundancy.

A CLOUD STRATEGY FOR UPGRADES

A shift to the cloud is underway at GLWA. Small expects to adopt cloud-hosted solutions for a number of key business systems upgrades — although technology supporting GLWA’s treatment plants and infrastructure control systems will remain on-premises and walled off from the internet for security purposes.

“My mantra is cloud first,” he says. “Obviously there are some areas where we’re not going to be able to do that. But we’re going toward cloud wherever we can.”

Small has an aggressive modernization agenda, including an upgraded asset management system to support GLWA’s focus on predictive maintenance and a new program management information system to help the authority manage multimillion-dollar capital improvement projects. Also on the horizon is a new ERP system, which will integrate finance, human resources and payroll functions.

“My current plans are still to upgrade, but I’d like to see the growing needs of our organization,” says Small. “We need these upgrades as we continue to mature as an organization.”
Using Technology to Empower Communities

District Focus

Lucas Metro Housing Authority

Lucas Metropolitan Housing Authority (LMHA) serves more than 17,500 individuals and families in Lucas County, offering everything from traditional public housing units to self-sufficiency programs that help clients achieve homeownership. As the need for affordable housing options grows, the authority is using technology to give employees new ways to communicate and collaborate — tools that ultimately help the organization better serve citizens who rely on its programs.

For instance, a new internal collaboration portal gives the authority a better way to share information, announcements and best practices across its four offices.

“We need to provide excellent customer service to our clients and partners who help provide wraparound services to support our customers,” says Demetria Simpson, Lucas Metro’s president and CEO. “It all starts by giving employees the resources they need to do their jobs effectively.”

Simpson views the portal — which lets employees create discussion groups around relevant topics — as a virtual meeting space that fosters a sense of community across the authority’s workforce.

“It is hard to improve the health of our workplace culture when we’re spread out and not under one roof,” she says. “It’s my goal to minimize those challenges by helping my employees engage with each other, communicate and create that central hook for information.”

The authority is upgrading citizen-facing technology too. A new applicant portal lets applicants determine eligibility, apply for housing programs and upload necessary documents.

All these functions are mobile-friendly to support a growing population of clients who rely on smartphones instead of traditional PCs, adds Simpson.

“If they have that smartphone, we want to be able to meet them where they are,” she says. “They don’t need to have a landline. They don’t need to go somewhere to use the computer.”

Thinking Mobile First

AT&T Global Public Sector Principal Architect Michael Harrod says mobility is a crucial strategy to engage citizens, particularly low-income populations who may need housing services and other social service programs.

“If mobility applications and services aren’t part of the conversation, I think you’re doing yourself a great disservice,” Harrod says.

“In some of those demographics, a smartphone is the primary computing device. These individuals need to be able to carry out a transaction on a mobile device without it being cumbersome.”

Improving the ease of transactions — and ultimately delivering a better user experience — requires special districts to reexamine their business processes as they upgrade technology.

“You need to think about what you actually want to deliver to the customer,” Harrod explains. “It’s about understanding what is really needed — for example, filling out an application. What are all the steps?”

He also recommends districts think in terms of integrated technology platforms to interact with its current clients as well as other residents who may need help. Simpson says these new communication channels are particularly useful for reaching populations with special needs, formerly incarcerated individuals returning to society and struggling college students.

“I think what truly helps is involving frontline workers in the conversation,” Harrod says.

“It helps them understand the goal of these initiatives and what’s coming up next, so there are no surprises.”

The Next Generation

Simpson says LMHA’s internal technology upgrades are an investment in current and future staff.

“Part of the reason for setting up that infrastructure and technology is to create a workforce that is technologically savvy,” she says. “Then they can better communicate with residents who are using more technology.”

This evolution also gives the authority new options for connecting with citizens.

The authority now uses social media platforms to interact with its current clients as well as other residents who may need help. Simpson says these communication channels are particularly useful for reaching populations with special needs, formerly incarcerated individuals returning to society and struggling college students.

“The next wave includes college students,” she adds.

“Right now we are looking at opportunities to provide housing for college students who are homeless or nearly homeless,” she says, “so they don’t have to make a decision between tuition and having a place to live.”

In addition, LMHA works to give clients technology tools and skills they need for success. The authority recently teamed with a nonprofit to provide 150 computers to low-income students and families to improve digital literacy. It also created onsite computer labs in public housing facilities and partnered with other local agencies to offer free technology courses.

These efforts — like the rest of LMHA’s technology initiatives — are designed to reduce barriers to independence for Toledo and Lucas County residents.

“How do we encourage them to do something like apply for a job if we are not eliminating those barriers?” says Simpson. “Part of building communities is making sure our residents have the technology they need to help them become self-sufficient.”

“If mobility applications and services aren’t part of the conversation, I think you’re doing yourself a great disservice.”

— Michael Harrod, Principal Architect, AT&T Global Public Sector
The potential impact of these changes is on the right truck with the right shipping container. In the future, Thompson also wants to eliminate the traditional check-in process using multiple forms of data to automatically authenticate the truck and its driver as they head to the correct area for unloading and loading. Securely automating these processes — along with safeguarding the port overall — relies on extensive use of video. Cameras capture images of each truck from multiple angles as it enters the container terminal, and powerful surveillance capabilities blanket the port facilities.

“Computing on the edge of the network instead of sending data back to the data center will reduce latency and improve speed,” says Duke. “Any amount of time reduction helps these organizations become more efficient.” And sophisticated software-defined network infrastructure will give ports and other organizations better options to support bandwidth-intensive applications.

Port Houston does not endorse any particular technology vendor.
Partnering for Progress

There are more than 6,300 fire districts in the United States, which collectively spend $145 million annually on information technology. The aggregate annual budget for the nation’s top 100 fire districts exceeds $7.2 billion, about $60 million of which is spent on IT. But even relatively large fire districts struggle with technology investments due to stagnant and restrictive funding mechanisms. Because of tight budgets, fire districts are likely to have underinvested in core technology systems and now need innovative approaches to modernization. Sharing systems with neighboring jurisdictions is one potential solution. Another is greater adoption of cloud-based platforms to reduce hardware and maintenance expenses.

Greater Naples Fire Rescue District

With more than 160,000 residents to protect and few budget dollars to spend, updating key technology systems is a struggle for Florida’s largest independent fire district. Innovative partnerships help the Greater Naples Fire Rescue District get the capabilities it needs without busting the budget. “We have very actively built relationships with our sister agencies and geographic business partners,” says Greater Naples Fire Chief Kingman Schuldt. “In particular, we’ve partnered with Collier County — which is our countywide government — on a number of technology platforms, which saves us hundreds of thousands of dollars.”

For instance, the district shares Collier County’s incident reporting system, which Greater Naples firefighters use to create and manage reports on more than 20,000 emergency response calls annually. The partnership lets Greater Naples pay a reduced fee to use the county’s system, rather than deploy its own technology. Even when the district isn’t sharing county systems, it has adopted similar technology to improve interoperability and cut training costs and other expenses. The district standardized on the county’s technology for defibrillators and cardiac monitors, which maximizes the district’s buying power, improves effectiveness of crews in the field and simplifies user training.

Schuldt says partnerships like these make sense for any public agency, but they’re particularly important for special districts, which often lack the support infrastructure and budget flexibility of traditional state and local agencies. Compared to a city fire department, where general city budget dollars can be reallocated to meet unexpected needs, Greater Naples relies primarily on a fixed ad valorem tax for operating revenue. “We have a very defined and limited funding source,” says Schuldt, “and that’s a significant challenge for us.”

Tight budgets are particularly painful when it comes to keeping pace with rapidly evolving communications technology — a vital tool for firefighters and paramedics, he adds. “There are so many new standards coming down for radio interoperability. Some of the radios we just bought a year and half ago are already out of date.”

A NEW NETWORK

FirstNet, the new national communications network dedicated to first responders, is designed to address some of these concerns, says Erik Lindborg, AT&T Associate Vice President. The network provides competitively priced voice, data and messaging services that include customized features such as priority service, local control and enhanced security designed specifically for public safety users.

Launched in the wake of the 9/11 terrorist attacks, FirstNet provides a common platform for emergency communications throughout the country. “In a multi-jurisdictional event, you may have the state fire marshal, county first responders, independent fire districts and city firefighters all on the scene,” says Lindborg. “In terms of situational awareness and the ability to communicate, enabling interoperability across those various jurisdictions is really important.”

FirstNet works with existing smartphones, laptops and other mobile computing devices. And it protects agency investments in these end-user devices by offering 3G, 4G and eventually 5G connectivity.

“We have very actively built relationships with our sister agencies and geographic business partners.”

— Kingman Schuldt, Chief, Greater Naples Fire Rescue District
Across the nation there are more than 7,000 public library districts that collectively spend more than $70 million annually on technology. These districts are evolving their roles — and therefore their technology needs — in significant and interesting ways. As reference resources have been digitized and made broadly available online, libraries have converted unused shelf space to exhibit areas, meeting and conference spaces, technology labs and more. Library systems also have become vital sources of broadband connectivity for citizens without home internet access.

The Gail Borden Public Library District in Elgin, Ill., may be the poster child for how libraries are modernizing. Although you can still find a book — or an eBook — at the district’s main library and two branch facilities, Gail Borden also launched an array of programs and forged new partnerships to ensure the library remains relevant — as well as staff members from other libraries — responded with a program that curates books from local self-published authors. The Soon to Be Famous Illinois Author Project, launched in 2015, features works by Illinois authors that are chosen by librarians. Like the large-scale exhibits, Gail Borden’s curated eBook concept is catching on elsewhere. Medal says the Soon to Be Famous program already has expanded to seven other states, and it’s launching in several more in 2020.

AN EVOLVING APPROACH
Libraries like Gail Borden may be changing their tactics, but they remain committed to their central mission, says Curtis Rogers, director of communications for the Urban Libraries Council. “We’re seeing libraries take their traditional core values — promoting open access to information, preserving democracy and removing barriers to inclusion — and use modern, connected channels to promote them,” he says. That shift includes adopting new approaches such as launching museum-quality exhibits in the district’s main library, including several space-oriented exhibits that featured live communication links to NASA’s International Space Station. Hosting a science fair and summer reading camp programs. Partnering with a local nonprofit credit union to open a branch location in the library, provide financial literacy programs and offer discounted loans to library card holders. As static reference materials exit shelves, activities like these ensure the library remains relevant to district residents. Medal credits the large-scale exhibits with increasing the library’s foot traffic and circulation. But even more significantly, they’ve helped cement the library as a hub for community activities.

“We launched our first one in 2005, we said this is not just a library exhibit, it’s a community event,” she says. “That’s how we approach a lot of our projects.” Since then, the concept has caught on with other library systems. In fact, this year Gail Borden will participate in a cooperative culinary exhibit with four other libraries. Even some of the library’s traditional functions are getting a new twist. For instance, when publishers raised eBook prices for libraries, district staff members — as well as staff members from other libraries — responded with

For a lot of people, the library is the only place they can go to get online to apply for jobs and do homework.” — Curtis Rogers, Director of Communications, Urban Libraries Council

Looking to the Future
At Gail Borden, Medal has witnessed firsthand the growing demand for network connectivity and capacity. She says the library has continually needed to increase network bandwidth to support users. For the first time, it’s also introducing a log-in process to manage Wi-Fi use. “We want to make sure people aren’t connecting to the Wi-Fi unintentionally,” says Medal. “We want anyone who needs the network to log in and use it. But we just don’t have unlimited resources to keep adding bandwidth.” As the library system looks toward the future, it’s using data as a guide. For instance, circulation data is used to understand which books or collections are used most frequently. This information helps inform purchasing decisions for new content. “We can evolve to meet the needs of our customers faster because we can see what they want,” says Medal. “We have more data than ever before.” Ultimately, that information is another tool to help the library system do what it has always done: provide the community a place for citizens to learn, connect and collaborate.

“We need to make sure we’re relevant,” says Medal. “We really do try to keep up with the trends and provide the right kind of experience.”
Modernizing to Stay Competitive

There are nearly 1,500 park and recreation districts in the United States. The top 100 of these districts ranked by budget size spent a combined $50 million on information technology annually, according to GovTech Navigator. Park districts are being driven savorward new digital services by increasing competition in the recreational marketplace. As commercial entities open recreational facilities and launch programs, park districts are responding to the smartphone generation with convenient mobile apps that make it easier for citizens to sign up for district activities or athletic training.

“Getting employees out of the back office makes them more efficient and lets them engage with constituents in more meaningful ways — which also can improve job satisfaction.”

— Sami Thibault, Technical Sales Director, AT&T

**NEW TECHNOLOGIES AND OPPORTUNITIES**

For park districts, mobility can be a critical strategy to serve both internal and external constituents, says Sami Thibault, AT&T Technical Sales Director.

“A big thing we see is districts enabling employees to do their work wherever they are. That keeps them from having to return to a desk to push paper,” she says. “Getting those employees out of the back office makes them more efficient and lets them engage with constituents in more meaningful ways — which also can improve job satisfaction.”

Constituent-facing mobile apps are gaining importance as well. Park districts are launching apps that provide everything from basic scheduling and rainout notices to mobile program signups and payments. There are apps to help the district confront another important challenge: recruiting and retaining talented staff.

“They need to know who needs training and who’s already had it. And we need to make sure that our risk management people know that too,” says Hamer. “We’re trying to get them to look at it in more meaningful ways, so that used to only be available to a subset of our employees.”

And golfers have several online options to check if courses are canceled or rescheduled. In addition, a rainout app alerts players when baseball games have been canceled or rescheduled. And golfers have several online options to check if courses are open and carts are available. By keeping customers happy, features like these also help the park district stay relevant in an increasingly competitive market for recreational opportunities.

“Keep your park districts up-to-date with the latest technology and innovative solutions,” says Hamer. “People can register for programs using a smartphone or tablet.”

**KEEPING PARKS RELEVANT**

Some of these activities already are underway at Northbrook Park District. The district broke ground in July 2019 on a 44,000 square-foot activity center that will produce more energy than it consumes. The net-zero energy building will feature a rooftop solar array, occupancy and daylight sensors, and high-efficiency heating and cooling equipment.

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— Sami Thibault, Technical Sales Director, AT&T

The district also recently upgraded its website and rolled out a series of web-based and mobile services to support users of park facilities and recreational programs. “Our registration system has been upgraded to be mobile,” says Hamer. “People can register for programs using a smartphone or tablet.”

In addition, a rainout app alerts players when baseball games have been canceled or rescheduled. In addition, a rainout app alerts players when baseball games have been canceled or rescheduled. And golfers have several online options to check if courses are open and carts are available. By keeping customers happy, features like these also help the park district stay relevant in an increasingly competitive market for recreational opportunities.

“The private sector has found advantages — whether altruistic or financial — in providing recreational services and facilities that used to only be available through the park district,” says Hamer. “So one of our challenges is being our very best and helping our communities understand that we’re a provider of services that are essential to them.”

**DISTRICT FOCUS**

**Northbrook Park District**

Each summer the Northbrook Park District mobilizes a small army of seasonal employees. The district, located near Chicago, onboards some 500 temporary workers annually to staff aquatic centers, summer camps, before- and after-school programs, golf courses and more.

The complexities of managing this expanding and contracting workforce is a key driver for internal modernization.

“We are rapidly moving away from manual practices,” says Molly Hamer, executive director of the district, which manages 23 parks and offers a wide range of facilities and programs.

“We’ve recently analyzed our workflow, and it’s clunky,” she says, “especially for our part-time employees.”

Hamer’s intent is to free the district’s hiring managers from paper-based processes for employment onboarding, benefits enrollment, compensation administration and performance management. She also wants to ensure temporary employees meet compliance standards for CPR certifications, harassment and safety training, and other requirements.

“We need to know who needs training and who’s already had it. And we need to make sure that our risk management people know that too,” says Hamer. “We’re looking to find a software solution that has all of that in one place.”

These needs are driving the district to implement new solutions for records management and human resources information management. The latest improvements, along with other recent upgrades, help the district deliver on its mission of providing a variety of affordable, accessible and sustainable recreational options for residents.

Hamer also expects them to help the district confront another important challenge: recruiting part-time workers who have become difficult to attract.

“In our area, many of the kids who used to take summer jobs as lifeguards and camp counselors now are taking advanced placement classes, so their focus is elsewhere,” she says. “It will help a lot to give them an efficient and modern way to interact with us — they can just go to their phone and apply.”

For park districts, mobility can be a critical strategy to serve both internal and external constituents, says Sami Thibault, AT&T Technical Sales Director. “A big thing we see is districts enabling employees to do their work wherever they are. That keeps them from having to return to a desk to push paper,” she says. “Getting those employees out of the back office makes them more efficient and lets them engage with constituents in more meaningful ways — which also can improve job satisfaction.”

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Driving Customer Experience

More than 1,700 special districts nationwide deal with transportation and transit. The bulk of these organizations focus on highway planning and construction, as well as public transit. The top 100 transportation and transit districts combined spend more than $800 million annually on information technology, according to data gathered by GovTech Navigator. Many transit districts are launching new services to improve customer experience, often to compete with ride-hailing services and other options. For instance, mobile ticketing applications on vehicles, Wi-Fi, and other amenities are becoming common ways for transit agencies to keep existing customers and attract new ones.

Orange County Transportation Authority

Public transit users in the California communities of Huntington Beach and Laguna Niguel now can summon bus rides whenever they need them using a mobile app — and they can ride all day for the cost of a $5 ticket. The new on-demand microtransit service is being piloted by the Orange County Transit Authority (OCTA), a special district which serves the transit and transportation planning needs of 31 million residents in 34 southern California cities.

OCTA’s six-month-old microtransit experiment offers a glimpse into how public transit agencies are evolving to compete against new transportation options and meet rising citizen expectations.

“We launched our microtransit pilot projects with the idea that this concept may grow in the future,” says Bill Mao, CIO for OCTA. “We are continuously evaluating our project and in a short period of time, we have learned a tremendous amount from this innovative pilot.”

CREATING THE FUTURE

Experimenting with microtransit isn’t the only way OCTA is evolving. The authority is driving toward a future where mechanical breakdowns are fixed before they happen, paper tickets are relics of the past, and many mission-critical software applications are hosted in the cloud.

Mao says OCTA intends to build upon its existing data expertise to improve reliability of its bus fleet and gain new insights into route planning. The authority already operates a data warehouse that provides a common view of critical information across the enterprise. The next step is to use sophisticated data tools to gain new insights.

“The future goal here is to do predictive and prescriptive analytics. We’re going to start some pilots within the next 12 months or so,” says Mao. “We’re also looking into adding machine learning.”

These tools could help OCTA design more efficient bus routes by analyzing traffic patterns, ridesharing data and other information. They could also enable the authority to closely monitor mechanical and operational conditions on its buses and to spot signs of trouble before equipment breaks down.

“One of the most important metrics we have is breakdowns,” says Mao. “We don’t want that to happen because every time one of our buses goes down that means our customers’ lives get disrupted.”

HUGE POTENTIAL

Technologies like analytics, mobility and the IoT have great potential to make transit agencies more efficient and effective, says AT&T Client Solutions Executive Liz Deering.

For instance, she expects smartphones to become a primary delivery platform for citizen services. “A cellphone crosses all boundaries — socio-economic, cultural, etc. — everybody has one,” Deering says. “It’s the one thing that unites us.”

That ubiquity also makes smartphones a valuable source of planning information. Anonymized location data from citizens’ mobile devices can give transit and transportation agencies valuable insight into travel patterns, ultimately translating into better services.

5G technology will be another game-changer for transportation, both in terms of citizen services and business continuity. Deering says the bandwidth and reliability of 5G will turn buses into rolling offices and buses are required to perform valuable emergency response functions.

“Let’s say there’s a major event and buses are required to move large amounts of people to evacuation sites. Mobility coupled with the FirstNet network will support that,” Deering says. “FirstNet will provide a robust first responder network with continuity and priority of communications if there’s a major event.”

FOCUSED ON INNOVATION

OCTA is piloting an upgrade of bus-mounted 800 MHz radio systems to 5G wireless, which will likely evolve to 5G once the technology is widely available. Mao says 5G will strengthen communication between OCTA and its customers. “For instance, the super-fast wireless technology will enable the authority to provide near real-time location data for buses and give riders more accurate arrival time information.”

“Technologies like cloud, IoT, analytics and mobility help us deliver the reliable and convenient services our customers depend on and expect.”

Bill Mao, CIO, Orange County Transit Authority
AT&T technologists, special district leaders and other experts offered insights throughout 2019 to help special districts manage today’s challenges and prepare for what lies ahead. Here are nine takeaways from this year’s Special Districts Program.

1. PRIORITIZE PRIVACY. The nature of privacy is evolving rapidly, and special districts must be ready for these changes. New laws give citizens more control over their personal data. A comprehensive approach to privacy will be crucial to comply with new requirements.

2. PREPARE FOR 5G. 5G — an emerging wireless technology — will be a game-changer for special districts. Not only will 5G deliver dramatic increases in speed and throughput, it will enable use cases like wireless streaming video from security cameras and real-time decision-making for autonomous vehicles.

3. THINK MOBILE. Broad adoption of smartphones, tablets and similar devices across all sectors of society makes mobility an important strategy to engage and serve constituents. Citizens expect to use mobile apps to pay transit fares, sign up for recreation programs, apply for benefits and more.

4. INVEST IN EMPLOYEES. Upskilling existing employees can help address skills gaps — especially for hard-to-recruit specialty positions. Special districts are finding it can be more cost effective to invest in and train their current workforce.

5. SEEK INPUT. With the pace of technological change increasing exponentially, special district leaders must do their homework before committing to a technology. Engage an array of industry sources to gain insights around technology trends and emerging use cases. Consider using pilots to test and prove solutions.

6. EVALUATE SECURITY. The federal Cybersecurity and Infrastructure Security Agency provides free Cyber Resiliency Reviews through its Cybersecurity Advisor Program. AT&T also offers a comprehensive analysis that districts can take advantage of to improve their security posture.

7. FIND A PARTNER. The risk landscape for special districts is expanding, and it’s difficult to recruit talented cybersecurity professionals to the public sector. These factors make security services more attractive to special districts. The right security partner can provide everything from endpoint protection to real-time network monitoring and threat intelligence-as-a-service.

8. PLAN FOR RESILIENCY. Special districts often play a vital role in emergency response and recovery. FirstNet, the dedicated national communications network for first responders, equips special districts to reliably communicate with other agencies during an emergency. Many special districts qualify for FirstNet as extended primary responders under the National Incident Management System framework.

9. OPTIMIZE NETWORKS. Future enterprise networks will face unprecedented bandwidth demands due to proliferation of high-definition video and other evolving use cases. Software-defined networks let special districts scale network capacity up or down, without adding or altering hardware devices. They also include intelligent management tools that let organizations adjust bandwidth on the fly based on customer-defined business rules around cost, consumption and other factors.
The 2019 Special Districts Program gave districts a dramatically expanded platform to create new peer-to-peer connections and trade bright ideas and best practices. This community coalesced around solving important issues facing district leaders today and charting a course for success in the years to come.

In 2020 we’ll continue our efforts to help special districts fulfill their vital missions. Look for new video webcasts that will give special district leaders an engaging and convenient way to learn about important technologies and trends. We’re also bringing back live Special District Summits in Los Angeles, Chicago and Orlando, Fla. And we’ll keep telling the stories of forward-thinking districts through our Technology Innovation Awards Program and monthly newsletters.

We remain committed to helping special districts connect and collaborate around issues that matter most to them — from transforming legacy infrastructure and modernizing workforces to implementing sophisticated analytics and strengthening security and privacy. Here’s to a faster, smarter and safer future.

A Platform for Progress

Special districts play a key role in emergency disaster response by operating critical infrastructure services such as transportation, utilities and water supply. Responders need communications that are fast, highly secure and reliable. FirstNet is the only nationwide, high-speed, broadband network designed specifically for public safety and delivers interoperability, for all responders, across jurisdictions.

Learn more at FirstNet.com
Our first name has always been American, but today you know us as AT&T. We’re investing billions into the economy providing quality jobs to over 200,000 people in the U.S. alone. We’re supporting the veterans who make our country stronger and providing disaster relief support to those who need it the most. By bringing together solutions that help protect, serve and connect — committed AT&T professionals are working with the public sector to transform the business of government.

For more information about the Special Districts Program, visit: govtech.com/districts

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