Georgia Annual State IT Report FY 2020

Georgia Annual State Information Technology Report
FY 2020

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From the State Chief Information Officer

Over the past decade, Georgia has placed top priority on using technology to make government more accessible, responsive, accountable, and secure. As a result, Georgia has emerged as a national leader in its use of technology. In fact, Georgia is one of only five states to be awarded an **A grade** by the prestigious Center for Digital Government in its 2020 Digital States Survey.

The onset of the COVD-19 pandemic midway through FY 2020 underscored the value of the strong foundation we have built. The state redoubled efforts in key areas:

- ensuring the integrity of state government information systems,
- strengthening the public-private partnership that makes it possible for state agencies to access proven technologies that greatly enhance their operations,
- improving Georgians' access to state services and information, and
- mapping the availability of broadband access across the state using address-level data.

Georgia has held fast to its commitment to cybersecurity amid new challenges brought by COVID-19. The state's Office of Information Security partnered with agencies to protect state networks as ransomware attacks intensified. Cybersecurity awareness training specifically addressing COVID-19 threats was delivered to state employees at all executive branch agencies.

As state agency employees had to shift to telework in mid-March, the security and capability of the state's SSL VPN was bolstered and up to the task. Long-term structures and policies were developed to support telework as a likely larger part of the state's work culture for the future. A new technology guideline was issued, along with an updated telecommuting policy, detailing steps for protecting state equipment, assets, data, and systems while teleworking. The use of passwords, removable USB storage, and conferencing tools are among considerations of remote work addressed by the guidance.

The state's public-private technology partnership, the Georgia Enterprise Technology Services (GETS) program, supported various needs of our health agencies, including the Department of Public Health (DPH), as the state responded to the pandemic. This support included items to equip COVID-19 contact tracers, contracting support for immediately obtaining new cloud services, and quick provision (often same-day delivery) of new servers needed by agencies addressing pressing demands.

Traffic on state websites surged as Georgians grew more reliant on the online delivery of services and information. For example, web sessions on the DPH website spiked by 11,000% at the start of the pandemic. Chatbots launched on multiple state websites in early April answered almost three million questions related to COVID-19 in less than three months. The state's GovHub digital platform was ready to accommodate and support new services as well as the sharp increases in web traffic.

Families without internet access found themselves at a particular disadvantage during the pandemic, unable to telework and unable to help their children participate in virtual learning. Using the state's new interactive broadband map, thousands of families have been able to locate the closest free public WiFi. The work is making a difference in ways no one envisioned when it began two years ago. Developed by the Department of Community Affairs, the Georgia Technology Authority, the Carl Vinson Institute of Government at the University of Georgia, and other agencies and providers, the statewide map includes more than five million locations, 507,000 of which have no broadband access. The map brings greater transparency to the internet marketplace and possibilities for partnerships among communities and service providers.

During a year when COVID-19 delivered threats on many fronts, the state's technology enterprise was on firm footing, able to meet needs as they emerged. This preparedness and experience position Georgia well for the future as we continue to serve as a model for other states to follow. As the pace of technology change continues to accelerate, having team members and service providers ready to meet the challenges is critical to addressing the many unique needs of state agencies.

I encourage you to look through this report and spend a few minutes learning more about the state's technology accomplishments and activities.

Calvin Rhodes

Purpose

When the Georgia Technology Authority (GTA) was created in 2000, the General Assembly charged GTA with compiling information from state agencies about their IT expenditures and presenting a report to state leaders every year. This charge was placed in state law (see O.C.G.A. 50-25-7.10). With comprehensive and accurate information, state leaders can make facts-based decisions about the allocation of limited state resources to support technology.

The Georgia Annual State Information Technology Report conveys the current state of technology in Georgia state government as assessed by the State Chief Information Officer (State CIO).

The report represents information technology for the state's executive branch agencies only, i.e., those reporting to the Governor. It does not address information regarding information technology matters related to the legislative branch, judicial branch, statewide constitutionally elected officeholders, or the University System of Georgia. Data used to create the report comes directly from executive branch agencies and enterprise systems of record. The data is compiled by GTA and reflects the efforts of the State CIO to improve the use of technology in supporting state government operations. The report contains the following major sections:

- Executive Summary
- Cybersecurity
- Information Technology Vision and Strategy
- Georgia's Approach to Rural Broadband
- Information Technology Investment Management
- Technology Services
- Digital Services Georgia
- Georgia's Information Technology Excellence
- Appendix

Executive Summary

During FY 2020, the state of Georgia continued to strengthen and expand the technology services state agencies rely on to provide information and services to their constituents. As noted in the **message from the State Chief Information Officer** on page 7, these capabilities took on added importance and utility as the state responded to the COVID-19 pandemic.

Cybersecurity remains a top technology concern for Georgia, and the state uses a multi-faceted approach to protecting sensitive citizen data and the IT enterprise. The **Cybersecurity** section on page 13 outlines numerous efforts to address increasing threats.

More than 146,000 state employees and contractors are participating in ongoing cybersecurity awareness training. In support of the executive order issued by Governor Kemp in August 2019 and under the oversight of the State Government Systems Cybersecurity Board, the Georgia Technology Authority (GTA) offers an enterprise training solution provided at no charge to executive branch agencies.

GTA's Office of Information Security (OIS) facilitated responses for state and local government agencies that suffered ransomware attacks in 2020. In cooperation with the Georgia Emergency and Homeland Security Agency and the Georgia Information Sharing and Analysis Center, OIS continues to facilitate evaluation of local reported incidents and provide recommendations. When appropriate, OIS facilitates the hand-off to the Georgia National Guard Cyber Protection Team and partners with them to improve incident response processes.

GTA's OIS also coordinated the second annual **Cyber Dawg** exercise in cooperation with the Georgia Cyber Center. Although held as a virtual event due to COVID-19 restrictions, this three-day, multi-agency security training exercise aimed to sharpen cybersecurity skills across a multitude of tools agencies can use in their IT environments.

Even with all the pressing business brought by the pandemic, the Georgia Enterprise Technology Services (GETS) teams resolved to proceed with preparations for the 2020 annual live **disaster recovery exercise.** In early October, a week-long exercise was completed, ensuring that DR continues to be a GETS priority. Read more about this exercise on page 32.

GTA continues to advance information technology governance and strategic planning processes for the state. GTA updated the exemption process for technology, with the primary goal of assuring that investments in IT generate business value while mitigating the risks that are associated with IT implementations. More information can be found in the **Information Technology Vision and Strategy** section on page 17.

The section also highlights the **Georgia Enterprise IT Strategic Plan 2025**, which captures Georgia's vision for its use of technology. Updated in FY 2020, the plan aims to assist Georgia government leaders in making informed technology decisions for their agencies. It establishes IT focus areas and goals as it sets the technology direction for the state's IT enterprise.

The Achieving Connectivity Everywhere (ACE) Act (SB 402), passed by the Georgia General Assembly in 2018, calls for promoting and deploying **broadband services** to unserved areas throughout the state. This year, the Georgia Department of Community Affairs (DCA), with assistance from GTA and other agencies and providers, developed a statewide broadband map of more than 5 million residential and business locations. This map also proved invaluable as a resource for locating public Wi-Fi locations during the pandemic. More information can be found in **Georgia's Approach to Rural Broadband** on page 23.

Tracking IT expenditures is one of GTA's statutory responsibilities. In FY 2020, agencies reported spending $686 million on IT infrastructure services, network services, application development and support, and related activities. The **IT Investment Management** section on page 25 looks at these expenditures and the various ways in which the state manages its technology investments. Information on spending also appears in the **Appendix** on page 41.

Since 2009, GTA has offered technology services through a **public-private partnership**. Using this somewhat unique approach, GTA provides a full range of managed network services and IT infrastructure services to 14 executive branch agencies, as well as a-la-carte services to many other agencies. After more than a decade, the partnership continues to meet its original goals of consolidating IT infrastructure; securing state data and systems; and ensuring a modern, reliable, and recoverable operating environment. Further, it delivered **cost reductions of $379 million** in its first 10 years, more than double the original estimate. The **Technology Services** section on page 31 includes information about the program. The section also describes the GTA Direct program, which offers Georgia agencies,

local governments, colleges and universities, and boards of education quick access to a range of IT services from pre-qualified service providers.

The **Digital Services Georgia** section on page 35 highlights the completion of **GovHub**, a digital platform for state agencies to use in creating a consistent online experience for citizens. As the state's official web-publishing platform, GovHub aligns with the state's digital compliance policy for ensuring accessibility and serving as a single source of consistent and accurate information across all of the state's various communication channels. Since the start of the pandemic, GovHub has assisted state agencies in making information related to COVID-19 available and accessible to Georgians.

Georgia's bold steps to modernize its IT enterprise over the past decade have earned the state a **national reputation as a leader** in the use of technology to transform government operations. Several honors are highlighted in the section titled **Georgia's Information Technology Excellence** beginning on page 37. In 2020, **Georgia earned its second consecutive letter grade of A**, the highest ranking possible, in the Digital States Survey, which evaluates states' use of technology to improve service delivery, increase capacity, streamline operations, and reach policy goals. Georgia also earned a prestigious **State IT Recognition Award** from the National Association of State Chief Information Officers for Cyber Dawg, the state's live-action cybersecurity training exercise.

Innovative technology projects are adding value to Georgia government and receiving accolades. Several of these projects are highlighted starting on page 38. Here are a few examples:

- The **Department of Revenue** (DOR) sought a solution for its aging Georgia Registration and Title Information System (GRATIS). DOR found a solution with the Driver Record and Integrated Vehicle Enterprise System (DRIVES), a multi-year effort between DOR and the Department of Driver Services. The project modernized and combined two of Georgia's largest and most complex legacy software systems.

- The **Department of Driver Services** (DDS) sought to replace its digital licensing system with the latest in security and constituent service efficiencies. After a competitive state bidding process and a contract award, DDS began implementing a new digitized driver's license and identification card system. The new system includes data management improvements and quicker transaction times for constituents.

- The **Department of Labor** (DOL) modernized its systems, automating tax and wage reports via the secure file transfer protocol (SFTP). Written in Java, SFTP allows payroll service providers and large single employers to transmit quarterly tax and wage reports electronically instead of mailing them on magnetic media as they had before.

As this report demonstrates, GTA remains committed to working in partnership with state agencies to take full advantage of technology's potential and to respond to the challenges it presents.

Cybersecurity

A Multi-faceted Approach to Cybersecurity

As technology advances, so do the threats from cybercriminals and hostile nations. According to Gartner, a leading IT research and advisory firm, cybersecurity demands focus and vigilance, and this section of the Annual State IT Report describes the multi-faceted approach that the state takes to protect sensitive citizen data and the IT enterprise. Georgia's Enterprise IT Strategic Plan 2025, which is available on the GTA website also examines the role of cybersecurity in the foreseeable future.

The overall strategy for the improvement of cybersecurity across the state continues to focus on our people. Governor Kemp's executive order on August 13, 2019 started a new chapter in cybersecurity training that continues to pay dividends across the state. The number of state employees and contractors in the Proofpoint platform has grown from an initial 95,000 to more than 146,000. In cooperation with the State Government Systems Cybersecurity Board, GTA constantly monitors the curriculum in this program to ensure it evolves with the current threat landscape. Training modules addressing issues facing employees in the new remote work environment have been implemented and continue to raise awareness to protect the expanded attack surface.

Managed security services remain important capabilities available to state agencies. The services are offered by Atos, which provides mainframe services for the Georgia Enterprise Technology Services (GETS) program, and include several tools and defenses that build on other services already in place. In addition to cybersecurity training, these services include:

- Security Operations Center (SOC)
- Security Information and Event Management (SIEM)
- Vulnerability Management System (VMS)
- Enterprise Governance, Risk, and Compliance (EGRC)

SOC and SIEM offer centralized, 24/7 security monitoring and proactive response to any threats to help keep them from spreading. VMS involves scanning servers, laptops, and desktop computers to identify vulnerabilities. Meanwhile, EGRC provides the capability to obtain a single, dashboard view of the full risk landscape and risk remediation. The services combine to build a more rigorous defense for state systems and data. State agencies can order additional, specialized security services, such as penetration testing, computer security incident response team, and digital forensics.

The State Government Systems Cybersecurity Board is charged with reviewing the cybersecurity of executive branch agencies to identify risks, promote best practices, and audit for cybersecurity training compliance. The board is chaired by the Governor's Technology Advisor and includes the Adjutant General, GTA's Chief Information Security Officer, the Director of the Georgia Bureau of Investigation (GBI), the Director of the Georgia Emergency Management and Homeland Security Agency (GEMA/HS), and the Executive Director of the Georgia Cyber Center at Augusta University. The board meets at least quarterly and provides an annual briefing to the Governor.

The **Enterprise Cybersecurity Risk Register** provides state agencies with a common framework for categorizing and responding to cybersecurity risks. State agencies rate their information systems as having a high, medium, or low impact, depending on the worst-case potential outcome of a cybersecurity incident. Agencies are responsible for ensuring their compliance with **cybersecurity reporting requirements**. GTA regularly administers questionnaires soliciting information about each agency's cybersecurity program and the security of information systems and individual applications.

With funding allocated in 2016, GTA began **IT security assessments** to determine the state's overall cybersecurity risk posture. The work is an ongoing part of operations, and the findings are reviewed by the State Government Systems Cybersecurity Board, which sets statewide priority for addressing recommendations for closing gaps. While security assessment planning continued in 2020, COVID-19 temporarily delayed the assessment schedule. In-progress reviews resumed in August 2020, and efforts are being made to put executive branch assessments back on schedule. As an example, the Department of Audits and Accounts (DOAA) and GTA's Office of Information Security (OIS) began a first joint audit, starting with the Stone Mountain Memorial Association in September 2020. This collaboration will create efficiencies in the audit and assessment process and lower the burden on agencies scheduled for both an audit and assessment in the same calendar year.

An effective strategy for cybersecurity calls for information and intelligence sharing among local, state, and federal agencies. The **Georgia Information Sharing and Analysis Center (GISAC)**, one of 77 U.S. Department of Homeland Security recognized fusion centers in the United States, serves as the primary repository for counterterrorism and criminal intelligence information in the state. Operated by the GBI with participation from several agencies and organizations, including GTA, GISAC distributes bulletins and threat assessments to law enforcement, public safety, emergency management, and private sector partners throughout Georgia. This success has been built upon in 2020 with a collaboration between GEMA and OIS. Through the utilization of federal grant funding, OIS has staffed an additional position that will provide greater integration with the GISAC and GEMA/HS as well as providing much needed depth to OIS cyber intelligence activities.

GTA's OIS facilitated responses for state and local government agencies that suffered ransomware attacks in 2020. Incidents at the local level continue to result from spear-phishing emails and poor cyber hygiene in internet-facing systems. OIS, in cooperation with GEMA/HS and the GISAC, continues to facilitate evaluation of local reported incidents and provide recommendations for next steps. When appropriate, OIS facilitates the hand-off to the Georgia National Guard Cyber Protection Team and partners with them to improve incident response processes. OIS continues to develop its own internal response capability and has been able to directly respond to incidents impacting executive branch agencies. This response capability represents significant cost savings to the state, especially among agencies in a fiscally constrained environment.

GTA's OIS also coordinated the second annual **Cyber Dawg** exercise in cooperation with the Georgia Cyber Center. Although held as a virtual event due to COVID-19 restrictions, this three-day, multi-agency security training exercise aimed to sharpen cybersecurity skills across a multitude of tools that agencies can use in their IT environments. This year's event included a total of 65 personnel across 21 state agencies and successfully built the bench for an anticipated resumption of a full-scale exercise in 2021.

The **Georgia Cyber Center** at Augusta University is currently the nation's single largest investment in a cybersecurity facility by a state government. The $100 million, state-owned facility is a unique public/private collaboration among academia, state and federal government, law enforcement, the U.S. Army, and the private sector. It is equipped to keep up with the changing face of cybersecurity and provides needed focus in key areas:

- Education and training for agencies, the military, and the private sector
- Incubation of new security ideas
- Research and development with an emphasis on cyber defense
- IT security information sharing among Georgia agencies, homeland security, and the private sector
- Public-private partnerships for cybersecurity innovations

The Cyber Center is comprised of two adjacent buildings totaling 332,000 square feet, and its cutting-edge features make it unlike any other facility in the nation:

- In partnership with Augusta University and Augusta Technical College, the center provides **21st century workforce training** through certificate programs and undergraduate- and graduate-level programs in cybersecurity and cyber sciences.

- The **Georgia Cyber Range** helps strengthen the stability, security, and performance of cyber infrastructures. It is available to students, industry, and government professionals for education and training, product development, offensive activity and competition, detection and defensive competition, response and recovery, and evaluation and benchmarking.

- The **GBI Cyber Crime Unit** allows law enforcement professionals throughout the state to take advantage of the GBI's expertise in digital forensics.

- The center supports **incubation and accelerator programs** through a strategic partnership with theClubhou.se, an Augusta-based non-profit organization with a proven record of helping technology startups succeed.

- **Demonstration space** is used to highlight cyber research taking place at University System of Georgia institutions throughout the state, including basic and applied research at Augusta University.

- **Build-to-suit Class A partner space** is available for lease to cybersecurity companies, which can then leverage the center's resources and the convenience of co-location with state, federal, and other industry associates.

- GTA is responsible for partner coordination and played a key role in bringing leading private-sector companies to the Cyber Center, including:

- BAE Systems, a global defense, aerospace, and security firm

- Defense Digital Service, which applies private-sector technology and approaches to the U.S. Department of Defense's most important initiatives

- Parsons Corporation, an engineering, construction, technical, and professional services firm offering cybersecurity and technical solutions

- U.S. Army Cyber Command

- Savannah River Nuclear Solutions, LLC

The Cyber Center positions the Augusta community and the state of Georgia as the nation's leader in the critically important field of cybersecurity.

Information Technology Vision and Strategy

Georgia's vision for information and communications technology is captured in the *Georgia Enterprise IT Strategic Plan 2025*, the latest update to the state's assessment of issues influencing which technology solutions agencies will deploy in the years ahead. The plan was published in May 2017 with an updated edition published in FY 2020. The updated vision is accessible online at https://gta.georgia.gov/it-strategic-plan-2025.

The state reviewed its technology vision this year, given the dramatic impact of the COVID-19 pandemic on normal business operation. In most cases, Georgia's response to the pandemic has not affected the long-term view of how technology will enable strategic objectives. However, it has shifted priorities and will result in achieving some objectives earlier than expected. These achievements resulted from compressing schedules for high-priority technologies, and no significant delays in any objectives are anticipated. A full review of the Enterprise IT Strategic Plan is scheduled for spring 2021.

The plan is intended to aid Georgia government leaders in making informed technology decisions. It defines IT focus areas and goals and sets the technology direction for the state's IT enterprise.

The Enterprise IT Strategic Plan does not replace the business-oriented strategic plans of individual state agencies but provides a look ahead to help them align their technology with the direction established for the state's IT enterprise.

In developing and maintaining the state's IT vision, GTA collaborates with technology leaders throughout Georgia state agencies to understand their business priorities and gathers insights from other states and the private sector to leverage proven technologies. This work identified the following long-term IT priorities:

- Ensuring cybersecurity for Georgia's agencies, citizens, and businesses
- Managing a growing pool of data to support state decision makers
- Taking advantage of proven technologies to improve interactions between government agencies and constituents
- Evolving the portfolio of shared technology services to ensure agency access to the best services at competitive prices
- Partnering with the private sector to bring the latest innovative technologies to bear on the state's business problems

Information Technology Governance Continuously Improved

GTA continues to advance its information technology governance processes by annually assessing the effectiveness and strategic alignment of the existing Policies, Standards and Guidelines (PSG) exemption process.

The primary goals of the PSG exemption process are to assure that investments in IT generate business value, while mitigating the risks that are associated with IT implementations. Recent revisions to the PSG process now require agencies to detail the implementation, operating, and maintenance costs that would be incurred during the first three years of the solution lifecycle.

This requirement provides agencies and their leadership with a true cost of ownership and detailed insight to known and unknown risks that may exist. The process also provides valuable data to the enterprise on how to position existing cloud brokerage offerings now available through GTA. The cloud brokerage offerings, along with the revised PSG exemption process, allow state agencies to make IT decisions with a clear understanding of the associated risks and how GTA can assist in mitigating them.

Strategic Planning

The goal of IT strategic planning is to help agencies make better use of technologies that support their business needs and the Governor's vision for Georgia. During FY 2020, agencies aligned their IT strategies with Governor Kemp's stated initiatives and their underlying priorities (https://gov.georgia.gov/about-us/initiatives-and-priorities):

- Make Georgia number one for small business
- Reform state government
- Strengthen rural Georgia
- Put Georgians first

Georgia's IT Strategy Cycle

The IT strategy cycle is a framework for supporting Georgia agencies in their effective and efficient use of technology to achieve the Governor's vision. A collaborative environment where agencies recognize shared objectives and work together to achieve greater enterprise benefits is key to success. GTA serves as a facilitator in identifying common needs, as a technology guide in identifying technology-enabled business strategies that have proven successful in other organizations, and as an advocate for agency solutions that show promise for the enterprise.

The Strategy Cycle is comprised of the following five components:

| 1. Scan Technology Enablers | 2. Survey Agency Priorities | 3. Refresh Enterprise IT Strategies | 4. Identify Innovation Opportunities | 5. Host Technology/ Strategy Session |
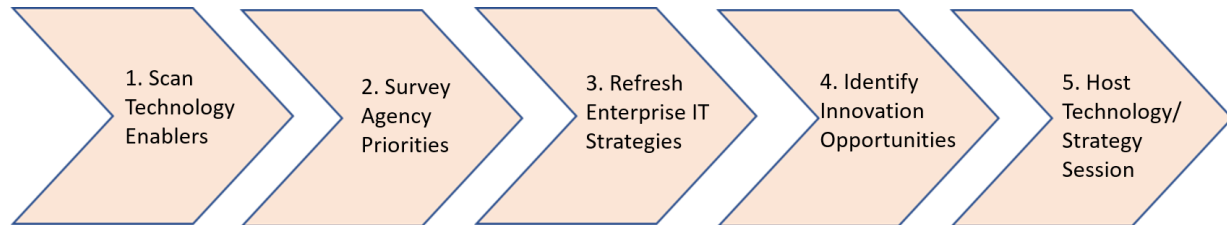
Environmental Scan for Technology

Technology scanning is a continuous process of gathering information about how technology may help Georgia state agencies meet their objectives. It identifies what is relevant and shares appropriate findings through periodic reports and presentations. Effective new uses of technology are incorporated into the annual update of the Georgia Enterprise IT Strategic Plan.

GTA relies on numerous sources for information about new business uses of technology, including Gartner, the National Association of State Chief Information Officers (NASCIO), and the Center for Digital Government.

In addition, GTA monitors a broad range of publications and participates in professional organizations and national summits, conferences, and symposia targeting the effective application of technology to business problems.

Survey Agency Priorities

GTA places high value on understanding agency business needs and continues to review agency strategic plans, conduct agency surveys, and hold regular meetings with agencies to ensure a clear picture of the business objectives that drive technology needs. In addition to one-on-one meetings with agency leaders, the State Technology Annual Report Register (STARR) is used to conduct an annual IT strategy survey of all agency CIOs or IT directors.

Refresh Enterprise IT Strategy

As mentioned in the opening section, the Georgia Enterprise IT Strategic Plan provides a vision of future technology use and establishes focus areas for the state's IT enterprise in a multi-year look ahead. It guides agency IT leaders in choosing new technology solutions that align with the state's enterprise IT vision and direction.

Identify Innovation Opportunities

GTA continues to recognize agency successes in using technology to deliver services in new and better ways. Top innovations are recognized at the annual Georgia Digital Government Summit. Examples of these successes can be found beginning in the section titled **Technology Innovation Showcase** on page 38.

GTA works closely with and supports the Governor's Office and the Office of Planning and Budget (OPB). GTA works with OPB to leverage technology in support of business process improvements identified each year by OPB. GTA provides leadership in identifying and adopting proven technologies to solve pressing government issues.

Host Technology/Strategy Summit

GTA's annual Technology/Strategy Summit was cancelled last year due to the COVID-19 pandemic. The summit was first hosted in 2012 and addresses a limited range of high-value technology opportunities or issues. The summit is directed toward both business leaders and technology professionals in state agencies and features presentations by subject matter experts from leading technology companies. The summit may be held as a virtual event in the spring of 2021.

Strategic Planning Survey – 2020 Results

GTA continued its annual survey of agency CIOs in 2020 to better understand how agencies depend on IT to meet their strategic objectives. Data from agencies are carefully analyzed and used to inform GTA's efforts to leverage innovations in a rapidly changing technology environment and ensure better support for state operations. Agency data is also used to update the Georgia Enterprise IT Strategic Plan. The first part of the IT strategy survey focused on the following areas related to enterprise IT objectives:

- Cybersecurity
- Data management
- Digital services

A total of 37 agencies responded to the survey. Selected questions and responses are below.

- To what extent has the Georgia Cybersecurity Strategic Plan been helpful in developing your agency's cybersecurity plan?
- To what extent has the Cyber Workforce Academy training improved your agency's cyber awareness, preparedness, and resilience?
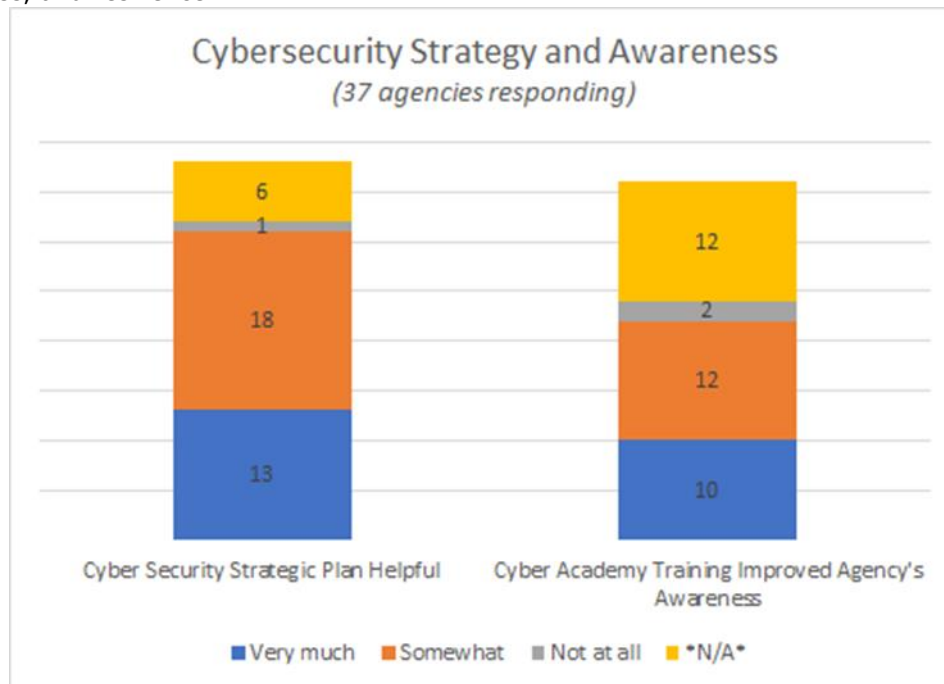
- To what extent has your agency adopted any industry data standards for organizing data for use within your agency?
- Is your agency sharing agency data with other agencies?
- Has your agency assigned a data steward to act as liaison for cross-agency data sharing?

The breakdown of the first question is below. Responses to the second and third questions indicated that 68% shared data with other agencies, and 59% of agency CIOs or IT directors were aware that their agency had a data steward.

Adopted Industry Standards (37 agencies responding)

- Not at all
- Just started
- Nearing completion
- Action is complete
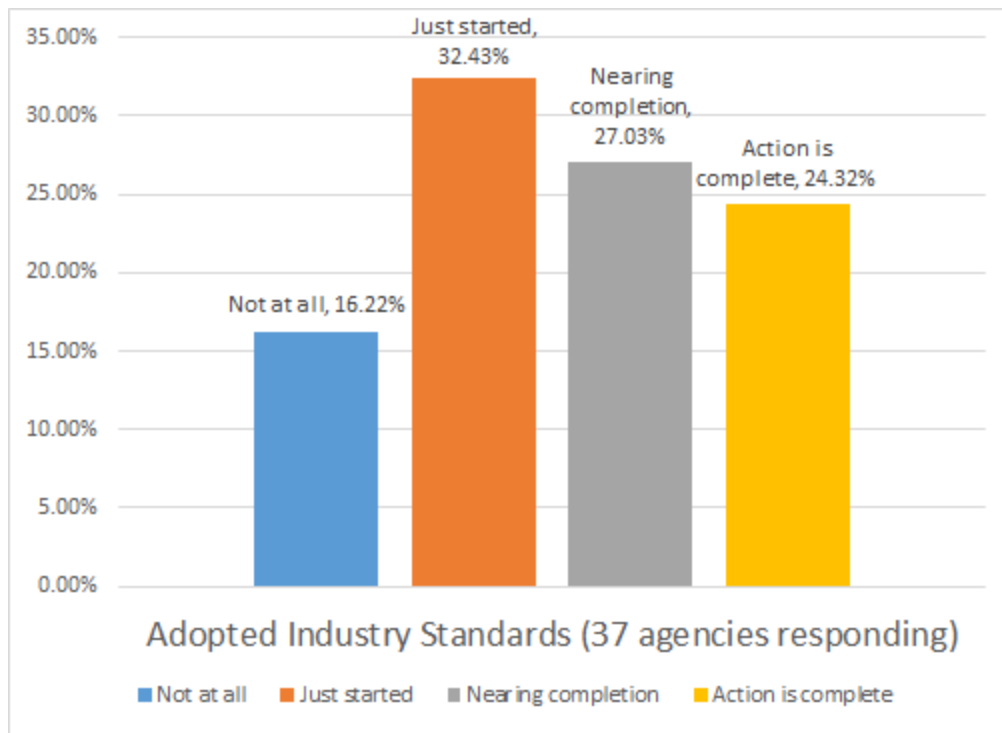
- What channels does your agency use to provide services to your constituents?
- Thinking about the services your agency provides to citizens, what portion of your agency's transactions will be conducted digitally through a web or mobile interface within the next three years?
- How often does your agency conduct formal user studies to improve your digital services delivery decisions?

Channels used to Provide Services
(Percentage of all listed channel*services)

Transaction Portion Conducted Digitally

13.51% | 43.24% | 10.81% | 13.51% | 18.92%

■ 100% ■ 2/3 ■ 1/2 ■ 1/3 ■ None

Formal User Studies Fequency

8% | 59% | 27% | 3% | 3%

■ *annually* ■ *ad hoc* ■ *never* ■ *don't know* ■ *quarterly*
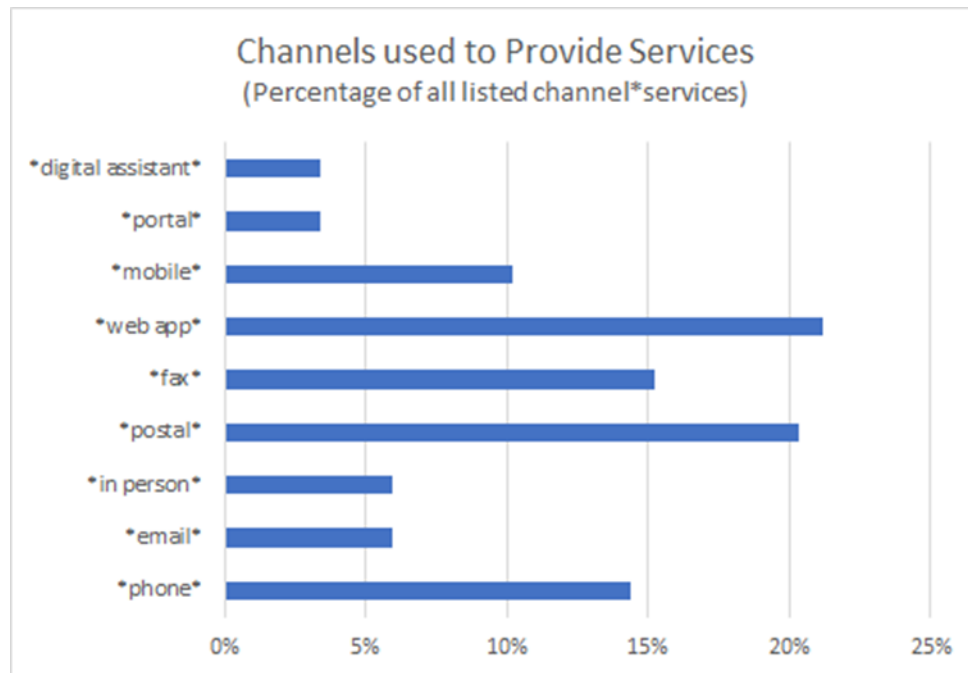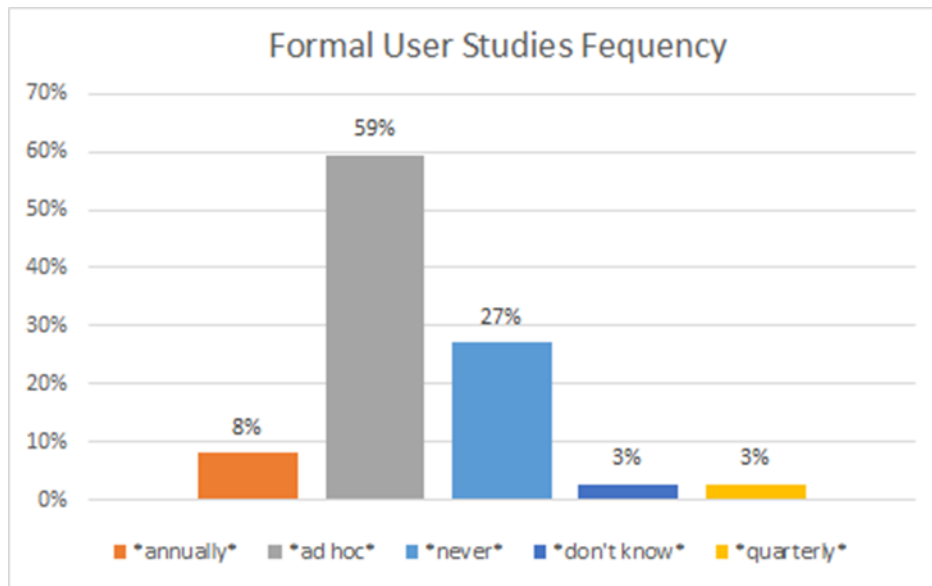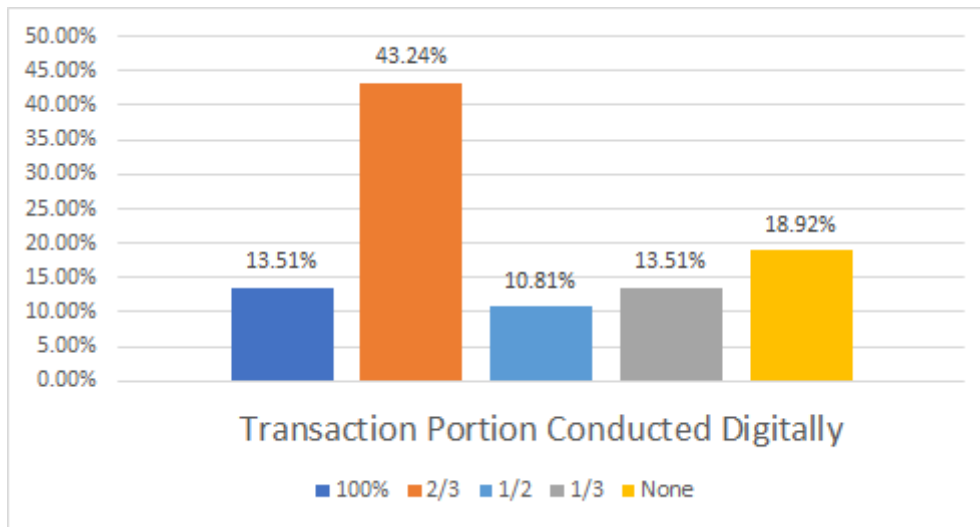
The second part of the IT strategy survey focused on individual agencies' strategic objectives. It asked agencies to rate the importance of information technology in supporting their activities in the following areas:

- Automating or improving business processes
- Analyzing data for decision support
- Sharing information or data with other agencies
- Improving citizen access to services (including mobile apps)
- Improving the security of sensitive information

Respondents identified 128 IT-dependent strategic objectives. The top three uses of technology in enabling agency strategic plans were unchanged from the previous survey: process automation, data analytics, and improved security. Responses are summarized in the following bar graph.

How important is the following use of IT for success in your strategic objectives *(27 agencies responding with 128 objectives)*

Category	Essential	Very important	Somewhat important	Not important
Automating Bus Process	33	73	20	3
Analyzing Data for Decision Support	35	56	30	8
Share Info w/ Other Agencies	19	46	42	22
Improve Citizen Access to Services	30	31	32	36
Improv Security of Sensitive Info	42	33	24	30

■ Essential ■ Very important ■ Somewhat important ■ Not important
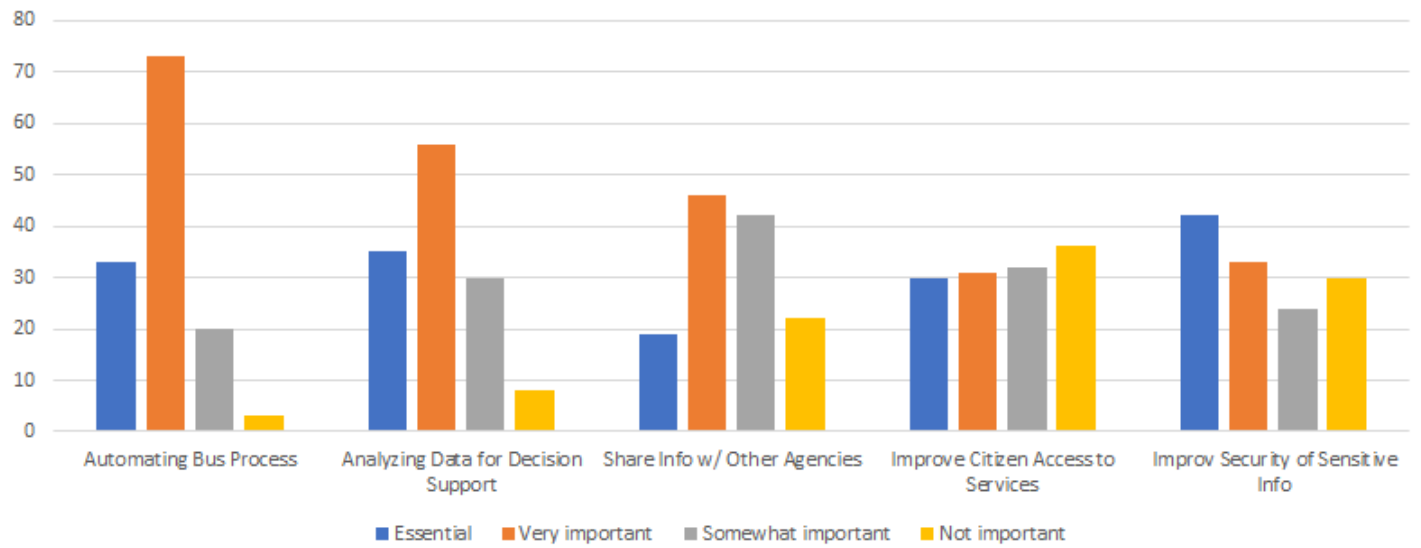
Georgia's Approach to Rural Broadband

The Georgia Broadband Deployment Initiative (GBDI) is a collaborative effort led by the Department of Community Affairs (DCA) and Georgia Technology Authority (GTA). Recognizing the importance of broadband availability to all Georgians, the General Assembly passed the Achieving Connectivity Everywhere (ACE) Act (SB 402) in 2018. The legislation calls for promoting and deploying broadband services to unserved areas throughout the state.

Broadband is critical infrastructure in the 21st century. Now, more than ever, Georgians are keenly aware of the importance of high-speed broadband and the fact that connectivity is vital to everyday life. Fast, reliable internet is needed for education, healthcare, economic vitality, and basic quality of life.

The mission of GBDI is to promote the expansion and deployment of high-speed broadband to all Georgians. With 10.1% of all locations in the state currently unserved, GBDI is focused on issues of connectivity and accessibility, as well as broadband adoption and digital literacy. Ongoing efforts include a unique, location-level mapping initiative – a first in the nation – along with extensive efforts to provide coordination and technical assistance for communities and private providers.

Public-private partnership will be key to accomplishing the goal of serving unserved Georgians. It is not the role of government to build or compete with the private sector. However, in rural, less populated parts of the state, the cost to deploy broadband presents a barrier for many providers. The broadband program continues to develop tools and capabilities to support public-private partnerships and address this critical need.

Mapping

A significant new tool in the state's broadband arsenal is the **Georgia Broadband Map**. To date, users have relied upon Federal Communications Commission (FCC) maps; however, Georgia's location-level mapping program is unique and identifies 12,316 unserved census blocks that were previously deemed "served" by the FCC. More importantly, there are 507,341 homes and businesses in the state that currently lack access to high speed broadband.

The 2020 Georgia Broadband Map highlights a significant digital divide between rural Georgia and metropolitan regions. In total, 70% of Georgia's unserved locations are in rural areas, and 31% of rural Georgia is unserved. This data represents a stark comparison to FCC maps and should be useful in targeting broadband investment. The map is also beneficial to pursuit of federal and other public funding, as well as tracking progress of broadband deployment.

Technical Assistance and Available Funding

Eliminating barriers to deployment is critical to broadband investment. At the community level, it is important to streamline processes and be prepared to partner with providers. GBDI – with active support from an advisory committee of providers and community representatives – has developed model ordinances and other resources that can be implemented to demonstrate that a community meets Broadband Ready requirements. Six Georgia communities have been designated Broadband Ready Communities in 2020.

Cost is a significant barrier to rural broadband deployment. While private investment is certainly key, total costs are prohibitive in less densely populated areas that have fewer potential subscribers. Given the public interest, federal, state, and local funding programs have been developed to incentivize broadband investment, particularly in rural areas. GBDI supports these funding initiatives by providing technical grant assistance and coordinating with various funding partners.

Emergency Internet and COVID-19 Response

The global COVID-19 pandemic exacerbated the demand for broadband, which is vital to virtual learning, telecommuting, telehealth, and other aspects of economic activity and social interaction. Immediately, GBDI published a statewide map of Wi-Fi hotspot locations available for public use to support education and telehealth. Subsequently, the broadband team has continued to work with the Georgia Department of Education and participate in the Governor's K-12 Restart Working Group on Connectivity and Devices to support local school districts.

Plans and Next Steps

GBDI continues to target ways to reduce deployment barriers at the state and local level. Nearly a dozen state agencies are working together to address various aspects of broadband deployment. Meanwhile, the broadband team continues to focus on priorities related to education, healthcare, small business, and quality of life.

GBDI is supported by an active Broadband Advisory Council, made up of provider representatives from AT&T, Comcast, Georgia EMC, the Georgia Cable Association, the Georgia Telecom Association, and Windstream, as well as representatives from the Association of County Commissioners of Georgia (ACCG), the Georgia Economic Developers Association (GEDA), and the Georgia Municipal Association (GMA). The support of these partners continues to be, vital to delivering broadband solutions to serve all Georgians.

Information Technology Investment Management

The state of Georgia spends a large sum of money every year on information technology, including services, equipment, applications, personnel, software licensing, development, and maintenance. However, determining exactly how much is spent, where the money goes, and what taxpayers are getting in return can be difficult to report on in the aggregate. Coupled with this challenge is the need to better understand whether Georgia is receiving or could receive greater value for the dollars invested in information technology. This is likely to be a continuing challenge due to the rapid changes in technology each year.

The Georgia General Assembly has charged the Georgia Technology Authority (GTA) with compiling information from executive branch agencies about their IT expenditures and presenting a report to state leaders every year (O.C.G.A. 50-25-7.10). With comprehensive and accurate information, state leaders can make fact-based decisions about the allocation of limited state resources to support technology.
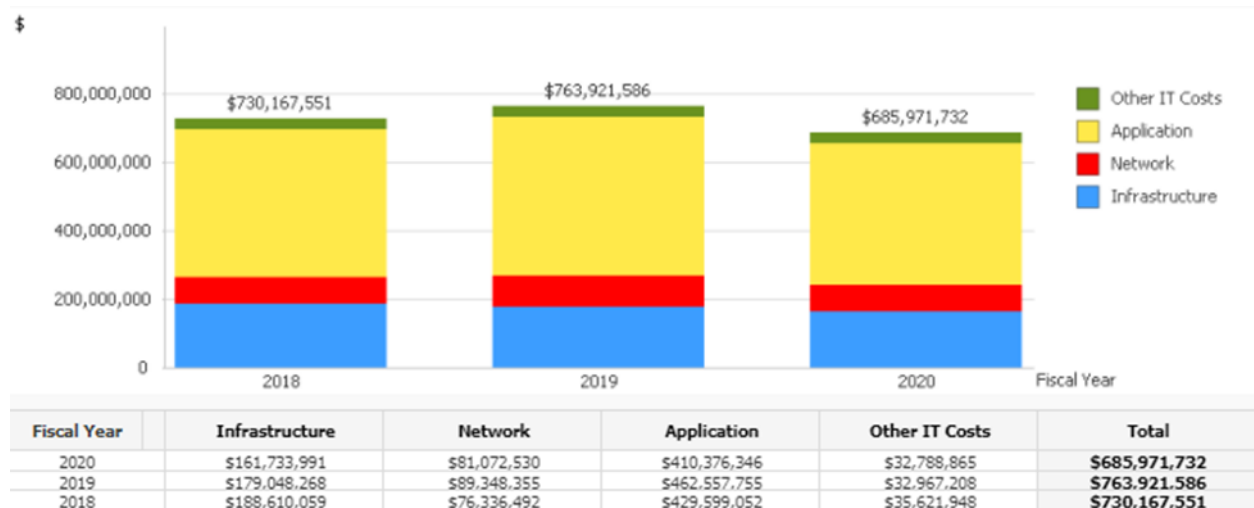
GTA uses the State Technology Annual Report Register (STARR) to collect data about IT expenditures from executive branch agencies. Information is requested in the categories of application, infrastructure, network, other IT costs, and projects.

The state has a more comprehensive understanding of the cost of infrastructure and network services than it does for applications. Infrastructure and network services are provided through the Georgia Enterprise Technology Services (GETS) program. Under GETS, Georgia can measure consumption and value through detailed reporting for all agency users of infrastructure and network services.

Enterprise IT Spend

The following graph depicts the most comprehensive summary available of IT expenditures by infrastructure, network, application, and other IT costs in FY 2018, FY 2019, and FY 2020.

Enterprise Spend by Cost Category

Fiscal Year	Infrastructure	Network	Application	Other IT Costs	Total
2020	$161,733,991	$81,072,530	$410,376,346	$32,788,865	**$685,971,732**
2019	$179,048,268	$89,348,355	$462,557,755	$32,967,208	**$763,921,586**
2018	$188,610,059	$76,336,492	$429,599,052	$35,621,948	**$730,167,551**

Agency Participation in IT Expenditure Reporting

A total of 53 agencies submitted a report for FY 2020.

Complete listings of the agencies reporting, and their expenditures are in **Appendix A** and **Appendix B**. The agencies listed in Appendix A with NR in the "Reported 2020" column did not submit reports because:

- The agency no longer exists.

- Its expenditures were included in the report from an agency to which it is administratively attached.

- The agency is attached to one of the state's constitutional agencies, which are exempt from filing the report.

In addition to constitutional agencies, other state entities with large IT budgets are not required to report their IT expenditures, including the University System of Georgia.

Did IT expenditures decrease in FY 2020?

Participating agencies spent over **$685 million** on technology in FY 2020, less than the **$752 million** reported in FY 2019. Several agencies reduced their IT spend by reducing mainframe costs. The difference in spending is attributable to:

- More accurate application costs captured in the application inventory

- More accurate IT full-time equivalent and IT contractor costs

GTA continues working with agencies to increase both the quantity and quality of data received.

Annual Investment Strategy Sessions

GTA's investment strategy sessions in FY 2020 included agency decision makers in business, operations, and finance. The agenda was targeted to increase awareness of the challenges associated with technology investments while also providing tools and best practices for a variety of investment scenarios. The information gathered in these sessions provides the baseline for annual reporting on Planned New Investments as shown on page 28.

Procurement Reviews

GTA enhanced the procurement review process to provide more proactive support as agencies plan for large investments.

GTA's procurement review process continues to provide valuable feedback as agencies navigate complex requests for proposal (RFP) and provider service agreements. Over the past year, GTA reviewed more than 12 sets of procurement documents, including RFPs, requests for information (RFI), scopes of work (SOW), and contracts representing approximately $90 million in investments.

IT Application Portfolio

The state's IT application portfolio included 776 applications in FY 2020, an increase of 204 since FY 2013. The following graph shows the number and percentage of applications by type:

Applications by Type

- Custom Coded — 39%
- COTS — 29%
- Web Sites — 16%
- SAAS/ASP/Hosted — 12%
- Mobile — 3%

Applications by Category

Category	Value
Web Services	147
Other	86
Regulatory Oversight System	71
Data Management	63
Productivity Tools	58
Case Management	55
Data Exchange	51
Financial Management	37
Document Management	26
Workforce Management	23
Business Intelligence	23
Risk Management	21
Learning Management	21
Asset Management	13
Trouble Tracking	12
Facilities Management	11
Time Accounting	9
Data Warehouse	9
Procurement/Contract Management	8
Grant Management	8
Development Tools	6
Mobile Application	5
Data Repository	5
Reservation System	4
Enterprise Resource Planning (ERP)	4

Applications by Category (776 Applications)

The graph above shows the number of applications by category.

Note: These applications were categorized by the reporting agency based on definitions provided by GTA. Many applications are accessible on mobile devices, but they are not categorized as mobile-only applications.

New Investments by Agency

The FY 2020 total project portfolio of $585 million shows a significant decrease from FY 2019, primarily due to the large healthcare initiatives and more accurate planning estimates. The FY 2020 portfolio is tracking over 42 active projects in 15 agencies. Several projects span multiple years. In addition to the active projects, several large projects totaling $417 million are in the planning phase. The total portfolio of in-flight and planned projects is more than $1 billion.

The following chart and graph depict each agency's percentage of the total budget for all active projects.
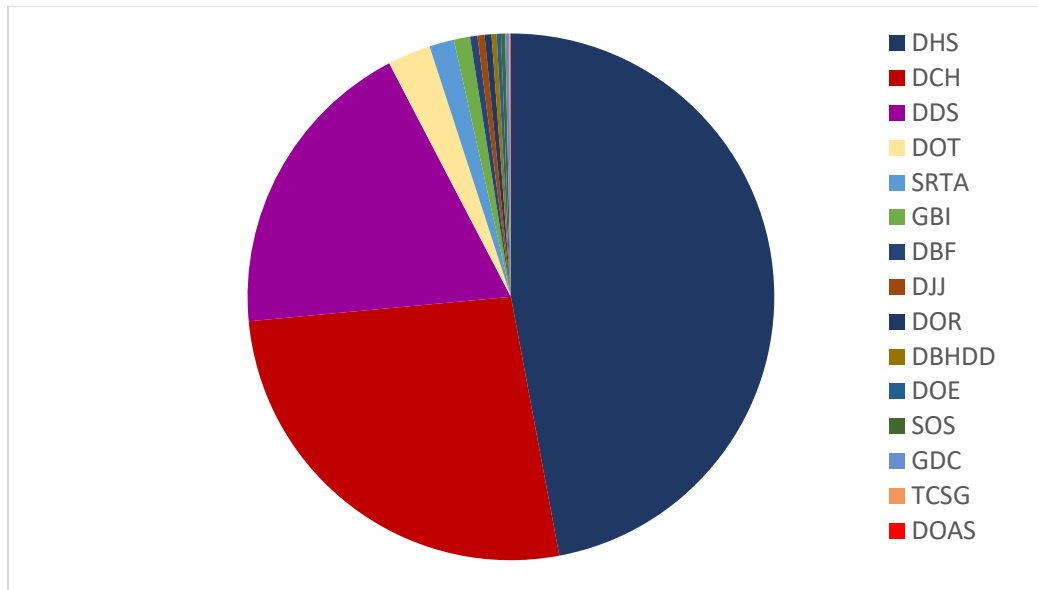
Dept of Human Services	$275,490,397	47.05%
Dept of Community Health	$154,930,608	26.46%
Dept of Drivers Services	$110,281,025	18.84%
Dept of Transportation	$15,488,482	2.65%
State Road and Tollway Authority	$8,893,951	1.52%
Georgia Bureau of Investigations	$5,821,142	0.99%
Dept of Banking and Financing	$2,667,707	0.46%
Dept of Juvenile Justice	$2,531,975	0.43%
Department of Revenue	$2,466,301	0.42%
Dept of Behavioral Health	$1,817,689	0.31%
Dept of Education	$1,546,500	0.26%
Secretary of State	$1,500,000	0.26%
Dept of Corrections	$1,463,310	0.25%
Technical College System of Georgia	$350,000	0.06%
Dept of Administrative Services	$216,649	0.04%
Total	**$585,465,736**	

Planned New Investments by Agency

The following graph depicts the several large projects totaling $417 million that are in the planning phase.
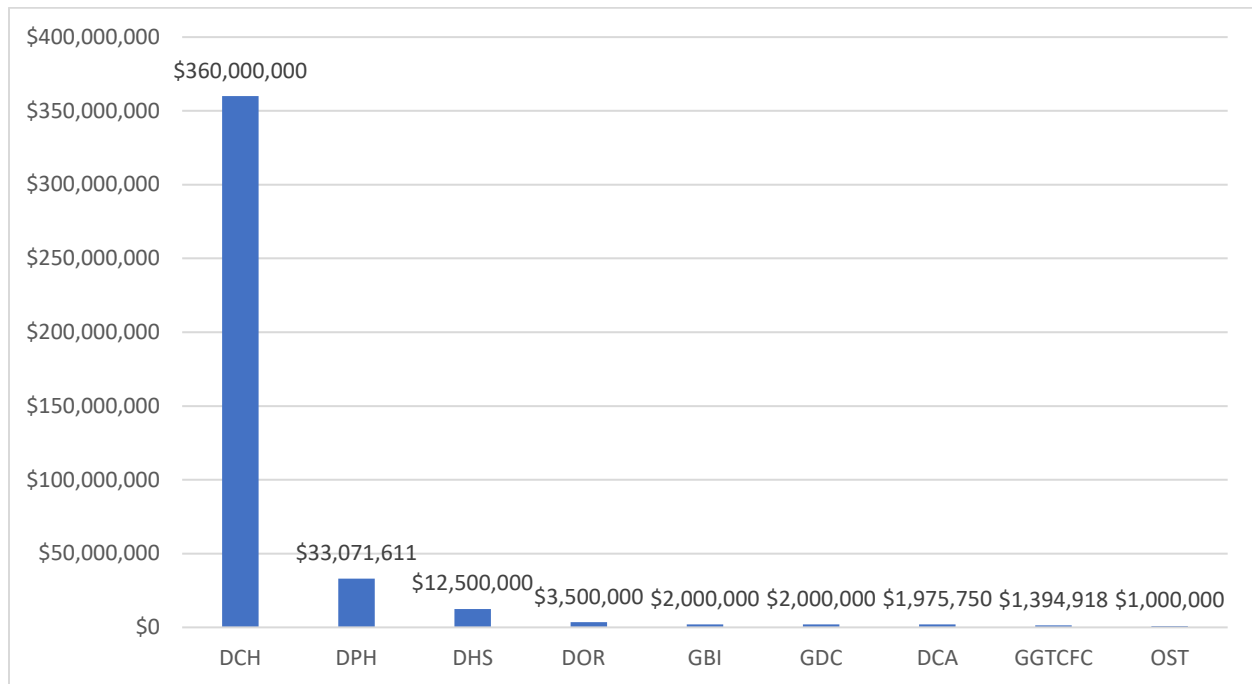
Department of Community Health	$360,000,000
Department of Public Health	$33,071,611
Department of Human Services	$12,500,000
Department of Revenue	$3,500,000
Georgia Bureau of Investigation	$2,000,000
Department of Corrections	$2,000,000
Department of Community Affairs	$1,975,750
Georgia Ethics Commission	$1,394,918
Office of the State Treasure	$1,000,000
Total	**$417,442,279**

Project Delivery Effectiveness

Critical Project Review Panel

The monthly reviews of the Critical Project Review Panel continue to have a positive impact on the success of the monitored projects. The panel limits its reviews to the most critical projects in the state's portfolio. For FY 2020, the critical project portfolio was valued at $288 million and encompassed 11 projects in eight agencies.

The information below puts into perspective the value and benefits of portfolio management and oversight.

Applying industry statistical information (based on the Standish Group's 2020 CHAOS Report) to our current active and approved portfolio of critical projects yields the following projected results:

- 23% of projects would be cancelled = $66.2 million
- 55% would cost 189% of the original estimate = $158.3 million
- 22% would be successful with no cost increase = $63.3 million

Without disciplined project, program, and portfolio management, the current portfolio of $288 million would deliver only 77% of the functionality originally planned.

The chart below displays how the state of Georgia compares to government and industry metrics compiled for the Standish Group's 2020 CHAOS Report for technology projects. It measures only critical IT projects that were completed in each fiscal year. The chart indicates a decrease in successful projects from FY 2019 to FY 2020. Of the 11 projects in the critical project portfolio, only two projects completed. One red/failed project is reflected below on the project effectiveness graph. The project was the Electronic Data Systems project at the Department of Community Health. This project was cancelled due to irreconcilable differences between the agency and the project vendor. The green is a result of a large successful project, Card Production, conducted by the Department of Drivers Services.

Project Delivery Effectiveness (by % of $) FY 2020
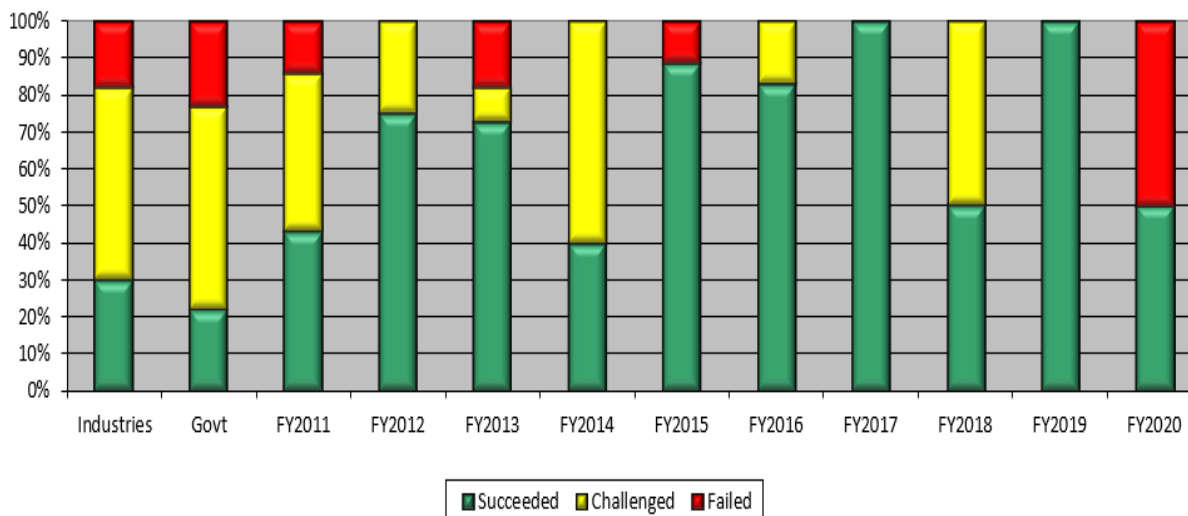
Technology Services

Georgia's Unique Approach

Georgia takes a different approach than most states when it comes to providing technology services.

Since 2009, GTA has offered technology services through a public-private partnership. Using this method, GTA provides a full range of managed network services and IT infrastructure services to 14 agencies in the state's executive branch, as well as a-la-carte services to many other agencies. The managed technology services approach aligns directly with Governor Kemp's strategic goal to **"Expand public-private partnerships and leverage technology to best utilize limited state resources."** Other states have paid close attention as Georgia has demonstrated a viable alternative to states developing and delivering technology services themselves.

Having now operated more than a decade, the partnership continues to meet its original goals of consolidating IT infrastructure; securing state data and systems; and ensuring a modern, reliable, and recoverable operating environment. In addition, in its first 10 years it produced **cost reductions of $379 million**, more than double the original estimate.

Over 100,000 workers spread across more than 1,200 state and local government locations received managed network services through the partnership in FY 2020. In addition, the partnership provided 40,000 state workers with IT infrastructure services while hosting 54,000 e-mail accounts and managing 2,500 servers. The state's storage environment offered 2.5 petabytes of storage space (a petabyte equals one quadrillion bytes).

Georgia uses a cyclical five-stage procurement process to contract for technology services from leading private-sector providers. The resulting plug-and-play model allows for quick response to agencies' changing business needs. It ensures competitive pricing and a readiness to capitalize on market innovation by regularly rebidding services. It makes it easy to expand the types of services and the number of service providers to meet demand. It's also easy to replace service providers when warranted. By utilizing the world-class skill set of the selected providers, Georgia is able to stay current with technological progress while containing costs and reducing risk in the state's IT environment.

To better manage service delivery and ensure consistency, the state applies the same business processes across all technology service providers. A strong governance structure benefits from regular involvement of agencies in defining business needs and in other aspects of the procurement process.

Using the state's five-stage process, GTA has competitively rebid mainframe, print and mailroom/courier, end user computing, and server services in recent years. The re-procurements reduced overall costs by 20 percent and added several new service providers, while also producing numerous service enhancements. The cost savings allowed for procurement of managed security services as an entirely new service line to address a fast-growing need.

Mainframe Services

IT services company Atos provides mainframe services. Mainframe processing continues at the state's North Atlanta Data Center (NADC). Storage and virtual tape systems are also maintained at the NADC, and a backup mainframe environment has been established at an Austin, Texas, data center.

Print and Mailroom/Courier Services

Xerox has provided print services since the state's shared IT services program began in 2009, and now under a newer contract, the company serves even more state customers in new and expanded ways. The current contract includes not only enhanced print services, but also print-to-mail (mailroom) and courier services from the Capitol Hill Mailroom in Atlanta's Twin Towers building. The service allows customers to print, package, and mail, all through one provider, leveraging a single, more streamlined process.

End User Computing Services

NTT DATA provides end user computing (EUC) services. Those center on the computers on state workers' desks and the technicians who help with any computer problems. EUC also encompasses anti-virus and encryption software, network printers, and regularly scheduled refreshes of laptop and desktop computers and network printers.

The refresh cycle features automated refresh notifications, self-service scheduling of refresh appointments, and automated reminders and refresh completion acknowledgements. An enhanced EUC hardware depot enables the

delivery of most standard EUC catalog items within five business days. Plus, EUC service covers software license management, helping agencies ensure licensing compliance.

Server Services

While physical and virtual servers in the state's data center continue to be essential, an increasing number of state agencies also capitalize on **cloud-based server services**. GTA helps support their efforts by offering managed cloud server services. That includes standard, public cloud servers which can be ordered through the state's IT service catalog and provisioned within as little as one business day. That's via a new Rapid Server Provisioning process that makes Amazon Web Services (AWS) Windows/Linux servers and Azure Windows/Linux servers quickly available to state agencies.

Service provider Unisys manages the cloud servers parallel to the way it manages physical and virtual servers at the state's data center. On agencies' behalf, Unisys also manages the relationship with the cloud provider and then offers related services such as backup, patching, monitoring, virus and malware defense, and technical support as suits an agency's needs. Once a cloud server is provisioned, additional services may still be needed to make it fully functional, including privileged access, business applications, database services, firewall changes, and others. These can be coordinated through Unisys.

Standardization of server types – whether cloud, virtual or physical – has significantly trimmed delivery time by fashioning new servers from an existing standard blueprint. That tactic, adopted in 2019, also promotes a consistent approach across the state's IT enterprise by providing common server standards, configurations, and operating systems, with those standards pre-approved by the state's IT Design Authority Review (DAR). Not every server will qualify for rapid provisioning. Requests for non-standard servers require handling via a streamlined Requirements Gathering and Specialized Solution Request process. There too, efficiency gains are allowing faster delivery times.

Unisys began providing server services within the state's IT shared services program at the start of 2019. That directly followed expiration of the state's previous contract with IBM, provider of server services since 2009. Server services encompass server hardware, whether hosted in the state's data center or elsewhere, along with identity and directory management, disaster recovery, and storage services. The state manages approximately 2,500 servers.

Managed Security Services

In a powerful enhancement to the state's information security efforts, managed security services became available in 2019 through service provider Atos. See a description of managed security services in the Cybersecurity section of the report beginning on page 13.

Network Services

Network services, among the state's most extensive technology offerings, include WAN, LAN, WLAN, telephony and remote worker access services. Voice services include long distance, business access lines, audio and video conferencing, Centrex, voice over IP, and other telecommunications services. Provided by AT&T, the services are used by many local governments in addition to state agencies. Software defined networking (SDN), Internet of Things, and Wi-Fi 6 are currently part of the GTA technology roadmap to help state and local government entities leverage next-generation network services to meet business needs and achieve their goals.

Office 365 Services

GTA offers messaging and collaboration services through Microsoft 365 within the Microsoft Government Cloud. GTA's Office 365 offering provides compliance with federal requirements for cloud services, including FedRAMP High, and requirements for criminal justice and federal tax information systems. These cloud-based SAS services include Exchange Online, Exchange Online Protection, Microsoft Office 365 applications for the Enterprise, One Drive for Business, Teams and SharePoint Online. The service supports 54,000 state email accounts and offers state agencies competitive pricing.

Annual Disaster Recovery (DR) Exercise Held

The state cannot wait for a convenient time to perform a live DR exercise. So, even with all the pressing business brought by COVID-19 in 2020, the Georgia Enterprise Technology Services (GETS) teams resolved to proceed with preparations for the 2020 annual live **disaster recovery exercise.** In early October a week-long exercise was completed, ensuring that DR continues to be a GETS priority. A half-dozen agencies participated. GETS server services

provider Unisys played a central role, in collaboration with AT&T, Atos, Capgemini and GTA. Technology enhancements allowed growth in GETS DR capabilities, including quicker recovery times and broader testing. In a year where so many activities shifted to virtual, the 2020 exercise provided opportunity to gauge remote recovery abilities, as well as needs for improvements.

GTA Direct

The GTA Direct program provides access to a range of managed IT services for Georgia agencies, local governments, colleges and universities, and boards of education statewide. GTA qualifies the pool of vendors and provides governance over the service contracts, while agencies purchase the services directly from the providers and manage the relationships themselves.

In the past year, the program saw several notable developments, and GTA Direct:

- Continued to provide an efficient procurement process allowing agencies to purchase services from GTA-qualified suppliers that understand regulatory requirements government entities must meet.
- Increased services sold across the GTA Direct portfolio by 21.3% over the previous year.
- Implemented a software repository tool that tracks contracts and associated documents.
- Assisted with COVID-19 response by facilitating discussions between suppliers and agencies to secure call center and remote learning services.
- Released a request for proposal (RFP) for network services that is on track to expand service types to better serve constituents and incorporate additional suppliers.

Services offered through GTA Direct include:

- Broadband Connections
- Conferencing
- Data Circuits for Wide Area Networking
- Dedicated Internet Circuits
- Disaster Recovery
- End User Computing
- Hosted Contact Center
- Inside Cable/Wiring
- Mainframe
- Managed Print
- Managed Security
- Managed Wi-Fi
- Oracle Products and Services
- Public Switched Telephone (PSTN) Voice
- Server and Storage
- Software Compliance and Software Professional Consulting
- Telecommunications
- Unified Communications
- Wireless Communications Devices and Services

Digital Services Georgia

The Office of Digital Services Georgia (DSGa) manages digital strategy for state agencies and elected officials to cultivate a mature digital presence and constituent-centric service delivery. The focus of DSGa expands GTA's view of the technology landscape from larger systems to granular interactions. The state offers both through various delivery channels and consumer devices. Constituents access state digital properties through newer channels like voice assistants and chatbots that did not exist just two years ago. To be able to serve this need, DSGa enables an omni-channel approach, keeping information and data consistent and centralized.

Georgia GovHub Migration Completed

In FY 2020, the DSGa team completed the development of the new GovHub Digital Content Management System. The platform supports 77 state websites. To confirm the new platform's technical excellence, the DSGa team contracted an external vendor to perform audits of the platform's code, security, and accessibility. Further, a user experience firm performed a usability and user experience audit of a sampling of platform sites. Neither audit uncovered significant issues. The GovHub platform moved from development to support and growth, where DSGa will continue to expand and fine tune the offering per agency and constituent needs. The platform gives state organizations powerful tools to effectively provide Georgians with services and information. It also exceeds the latest web accessibility, security, and performance standards. Collaborating with leading private-sector partners and state agencies, DSGa fashioned a digital platform that features new branding and promotes a consistent look and message across state websites.

Redesigned GeorgiaGov Launched

As a part of the GovHub migration, the DSGa team rebuilt GeorgiaGov (www.georgia.gov) from the ground up. The platform was reimagined based on the content, user studies, and agency feedback. The team developed a service-oriented framework to focus on key use cases that Georgians face. For example, the "starting a business" guide touches numerous agencies and services. Across the website, information was consolidated into "guides" to help Georgians understand the full scope of the process rather than having to seek out that information agency by agency. A COVID-19 information hub was created that became a one-stop view of the state's response to the pandemic. Revamped voting guides, which doubled traffic from previous election years, presented actionable information clearly and concisely. GeorgiaGov continues to grow through research and user studies to identify the next use cases and services.

New Agencies Added to GovHub

The primary focus of FY 2020 was to migrate existing platform customers from the old to the new GovHub platform. The new platform's design, features, and security proved a compelling draw for non-platform agencies as well, so the team engaged in initial discovery to onboard some high-profile constituent-facing sites. Both the Office of Insurance and Safety Fire Commissioner and the Georgia Consumer Protection Division worked with DSGa in FY 2020. They plan to improve content and migrate the sites to the GovHub platform in FY 2021.

Training and Capacity Augmentation

To coincide with the GovHub migration to a new platform, DSGa offered monthly training classes for state agencies to learn the new content management system. Regular classes were also developed and conducted for a new site performance and measurement tool. In addition, the online knowledge base for on-demand instruction was overhauled. Special content-specific classes were also offered, as well as one-on-one coaching sessions. The delivery of the training program pivoted from in-classroom to online instruction over the course of the year.

GovHub Analytics to Measure Success

DSGa rolled out a new analytics tool for all GovHub partners to actively monitor, measure, and improve the performance of state agency sites. The new product helps to ensure content quality, increase digital accessibility, and enhance search engine optimization, which all adds up to an improved user experience.

Digital Academy

To provide digital content managers with the skills and tools needed to produce accessible content, DSGa offered a regular workshop series on content and understanding audiences. These courses are designed as a hands-on approach for state agencies to improve their content strategy, writing, and best practices for accessibility. State

employees who successfully complete all courses receive state certification as content specialists. The courses are open to anyone who plans, produces, or manages digital content for state agencies.

GOVTalks

DSGa hosted and presented a statewide conference in April 2020 for public service employees responsible for their organization's website or applications. Dedicated to helping state agencies in Georgia create a top-notch web presence, the GOVTalks conference focuses on best practices for creating and managing user-centric content. While it was the 13th edition of the event, it was the first to be held completely online, with more than 100 attendees.

Chatbot and COVID-19 response

DSGa, as a part of the future-facing roadmap, began researching chatbots and artificial intelligence (AI) well in advance of FY 2020. The rapidly developing COVID-19 emergency accelerated plans for integrations. When the stay-at-home order was issued and unemployment claims increased at a staggering pace, the Georgia Department of Labor's (DOL) call centers became overwhelmed. DSGa worked with the DOL team to implement a chatbot quickly to resolve some of the call center burden. The initial bot was deployed within three business days of the request. It was then fine-tuned to improve the features over the next several weeks. Shortly after the DOL integration, the bot was added to other key sites in the COVID-19 emergency. These sites included the Georgia Department of Public Health (DPH), the Governor's Office, and GeorgiaGov. The COVID-19 emergency escalated the approach to the chatbot, and DSGa was able to more clearly articulate a path forward to the next iteration of an enterprise-wide AI tool.

Georgia's Information Technology Excellence

The state of Georgia has taken bold steps to modernize its IT enterprise over the past decade. In doing so, it has earned a national reputation as a leader among states in the use of technology to transform government operations. At the same time, Georgia's pioneering approach to partnering with world-class technology companies has become a model for other governments. The following accomplishments and honors from 2020 document Georgia's continuing successes.

Georgia Shines in Digital States Survey 2020

Good news from the latest report card - the state of Georgia earned a grade of A, the highest score possible, in the 2020 **Digital States Survey**. Not only that, Georgia also ranked among the top three states in the Leadership category.

What does it take to get this A? Digital States criteria say it indicates a state that is demonstrating "strong innovation, high performing solutions with verifiable impacts across all categories. Excellent practices have been applied in all aspects of operations, governance and administration."

States are judged every two years by the Center for Digital Government, a national research and advisory institute focused on information technology policies and best practices in state and local governments. Over the last nearly 25 years, the center has evaluated states' use of technology to improve service delivery, increase capacity, streamline operations, and reach policy goals. Each state is then assigned a letter grade based on quantifiable results.

Georgia's A marks its second consecutive top score going back to the 2018 survey. The state earned an A- in 2016. Georgia shares the A status this year with only four other states: Michigan, Missouri, Ohio, and Utah. That is select company to be in. It reinforces Georgia's status as one of the nation's leading states in the use of technology to serve its citizens and improve government efficiency.

The category of Leadership gauges a state's technology strategy on consistency and support of the governor's priorities, as well as effectiveness of collaboration with agencies on programs, planning, and policies.

NASCIO Recognizes Georgia

Georgia received national recognition for Cyber Dawg, the state's live-action cybersecurity training exercise. Georgia earned a prestigious National Association of State Chief Information Officers (**NASCIO) State IT Recognition Award**. Cyber Dawg and other award winners were announced at NASCIO's virtual annual conference in mid-October.

NASCIO honored Cyber Dawg in the cybersecurity award category. The multi-agency security exercise debuted in May 2019 and was hosted at the Georgia Cyber Center in Augusta. It brought together information security professionals from six state agencies and, through a special partnership, the far-away *Republic* of Georgia. GTA led the event and collaborated closely with the Georgia National Guard in conducting the exercise. The complex exercise provided invaluable practice for state cybersecurity team members in live-action scenarios. In this case, they were put to the task of defending against mock ransomware attacks. The exercise also fostered connections across agencies in the campaign to safeguard state systems and information.

The Cyber Dawg exercise will be held annually. Plans are to expand the exercise to serve Georgia local governments and their cybersecurity team members. The 2020 virtual edition involved more education sessions and individual practice with security professionals participating remotely.

Georgia Receives Two StateScoop Awards

Georgia received two awards from **StateScoop**, a leading public sector tech media brand in the state and local government market. Georgia's new digital platform, GovHub, as well as state Chief Information Security Officer David Allen won 2020 **StateScoop 50 Awards**. The annual **StateScoop 50 Awards** honor the best and the brightest who make state government more efficient and effective. These awards celebrate the outstanding achievements and acknowledge states' tireless efforts to make a positive impact in the government IT community and in public service. GovHub, overseen by GTA's Digital Services Georgia team, earned a State IT Innovation of the Year award. David Allen was honored with a State Cybersecurity Leader of the Year award. Members of the state and local government IT community nationwide cast more than one million votes on StateScoop's website to select the winners. Hundreds of nominees were in the running across six award categories.

Technology Innovation Showcase

The following 10 projects from state and local government organizations received top honors in Georgia's Technology Innovation Showcase for 2020. They were presented at the Georgia Virtual Digital Government Summit on October 8-9, 2020.

The Governor's Mansion RFID Project

Georgia Building Authority (GBA)

The Georgia Building Authority is responsible for ensuring that the $13 million art collection housed at the Governor's Mansion is maintained and inventory is always kept up to date. As recently as 2018, inventorying the Mansion's extensive collection required manually locating items and comparing them against the last appraisal reports. The process took weeks to reconcile due to the arduous process of matching items with original mid-twentieth-century photos and hand-painted inventory numbers for verification.

To boost efficiency, GBA engaged WiseTrack, an application that specializes in inventory tracking for government agencies. With the help of WiseTrack, GBA carefully attached a variety of radio-frequency identification (RFID) chips to each of the collection's pieces. Data picked up from antennae, scanners, and chips are compiled in a web-based application. GBA staff are now able to locate and track item movement easily by using a scanner and reviewing the RFID antenna report. The solution is an effective way to track the museum-quality collection at a taxpayer-conscious price. With artifacts now tagged, GBA's plans include adding interactive metadata so that Governor's Mansion guests can use their smartphones to learn more about each piece.

Enterprise Asset Management and Work Order System

The City of Augusta

Augusta implemented an enterprise work order and asset management system to successfully streamline business processes and support mobile operations. Departments use Cityworks to remotely dispatch crews for work orders based on location, eliminating unnecessary trips for paperwork. Before Cityworks, each Augusta department used its own tools for asset and work order management. After first deploying Cityworks for asset management in the utilities department, the city recognized the tool's potential to improve operations. Cityworks was soon deployed across all departments.

Today, Cityworks is used by more than 775 staff members from 25 Augusta departments with dozens of business processes configured in Cityworks workflows. More importantly, the system uses mobile devices, maps, and ESRI tools to streamline complex processes and improve service delivery to Augusta residents.

Cybersecurity for a Safer City

City of East Point

East Point knew it needed a cybersecurity solution that could buy back crucial time for its IT team in the face of cyberthreats. The city chose the Darktrace Cyber AI platform to detect and fight evolving threats targeting its digital infrastructure. This machine learning technology has proven critical in East Point's ability to continuously monitor the security of its digital environments. It also helps defend against fastmoving ransomware and unauthorized data exfiltration.

Without training datasets or preset rules, Cyber AI learns directly from the city's infrastructure, ingesting hundreds of dimensions of raw data to discern a sense of normalcy. This understanding of normalcy contextualizes patterns of use and how users interact and collaborate in real time. With Cyber AI, East Point can protect the infrastructure that keeps the lights on, heat running, water flowing, and waste managed for its constituents.

State Driver Services New Card Production Services

The Georgia Department of Driver Services

The Department of Driver Services (DDS) strives to incorporate new technology and best industry practices into the state's digital licensing system every eight-to-10 years. In 2018, almost 11 years since a system upgrade, DDS sought to replace the outdated system with the latest in security and constituent service efficiencies. After a competitive state bidding process and a contract awarded to Thales Gemalto, DDS began the implementation process. The New Card Production Services (CPS) system supports production of interim and permanent driver's licenses (DL) and identification cards.

Before the new system, it took at least four minutes to complete the driver examiner transaction - examiners now complete a transaction in just two minutes. Printing an interim DL or ID now takes only seconds rather than the two minutes required before. Data management improvements enable constituents at DDS locations to benefit from electronic imaging and quicker resolution to problems.

Quicker transaction time for DL and ID issuance means driver examiners can help more constituents. This increased efficiency allows for the redistribution of positions to help offset heavy workloads in other areas. Further, the system allows DDS to issue licenses and ID cards that are more secure than ever before.

Automate Tax and Wage Reports via SFTP

The Georgia Department of Labor

Aging systems written in COBOL were creating challenges for the Department of Labor (DOL) in processing over 1,600 pieces of magnetic media per cycle. The old system also increased the potential for a breach of security when data were sent via the United States Postal Service. In 2016, DOL began a modernization program to update the technology with secure file transfer protocol (SFTP) as a primary focus.

Written in Java, SFTP allows payroll service providers and large single employers to transmit quarterly tax and wage reports electronically instead of mailing them on magnetic media as they had before. As a result, magnetic media submissions have decreased by 25 percent. SFTP also prevents employers from submitting reports with invalid, inactive, or voided DOL account numbers.

Voucher Capture and Retrieval System

The Georgia Department of Natural Resources

The Department of Natural Resources (DNR) was in dire need of a system that could replace its outdated voucher processing system. The new DNR Voucher Capture and Retrieval System provides a vehicle for DNR to capture vendor payment vouchers electronically and quickly transmit them to DNR accounts payable (AP). This web-based application is accessible from any DNR office.

Users enter voucher information into a form, attach scans or photos of supporting documentation, and submit that information for payment. The voucher information is organized and presented to AP through online work queues. AP then can assess the validity of the payment request and load the required information into the Peoplesoft ERP for payment. The Voucher Capture and Retrieval System also provides audit data, tracking capability, payment status, and the ability to locate and view voucher records.

By reducing the time required to pay vendor invoices, the application reduces the frequency and friction caused by late payments and improves cash flow for DNR business partners.

Georgia DRIVES

The Georgia Department of Revenue

The Department of Revenue (DOR) sought a solution for its aging Georgia Registration and Title Information System (GRATIS), created in 1999. Operating costs were high, and counties experienced challenges in serving constituents when their printers were not connecting to GRATIS properly. DOR found a solution with the Driver Record and Integrated Vehicle Enterprise System (DRIVES), a multi-year effort between DOR and the Department of Driver Services (DDS). The project modernized and combined two of Georgia's largest and most complex legacy software systems.

DRIVES was developed and implemented using the FAST Enterprises commercial-off-the-shelf (COTS) application configured and tailored to both agencies' business requirements. With DRIVES, the agencies have an application that can be supported by internal staff. The .NET framework platform provides technological and cost-saving advances, making the legacy mainframe platform a thing of the past.

The Mission Personnel Accountability System

The Georgia National Guard and State Department of Defense

The Georgia Army National Guard and the State Department of Defense Personnel Office are committed to ensuring a streamlined process and quick disbursement of pay for Georgia's soldiers. In the past, confusion surrounding duty status often led to questions about soldiers' pay and entitlements. The Georgia Army National Guard developed the Mission Personnel Accountability System (MPAS), allowing individual units to easily update their personnel rosters.

The system roster remains open for personnel additions each day, a snapshot of each soldier's duty and pay status is taken at midnight, and the data becomes static for administrative processing. The snapshot file can then be downloaded and given to the State Personnel Office for hiring and pay purposes. With the introduction of MPAS, the Georgia Army National Guard has delivered a breakthrough innovation. Georgia can now ensure that soldiers do not experience paycheck interruptions. MPAS provides Georgia a uniquely efficient personnel accounting system, unparalleled among other states' National Guard organizations.

OneUSG Connect Payroll Standardization

The University System of Georgia

The University System of Georgia (USG) is responsible for 26 higher education institutions and approximately 389 facilities within the Georgia Public Library Service system. The OneUSG human capital management (HCM) initiative brought all the ADP-supported institutions onto one common HCM platform. This consolidation occurred in discrete cohorts, beginning with the USG office in January 2017 and concluding with the final institution in March 2020. OneUSG consolidates human resources, payroll, and benefits functions onto a common technical platform, eliminating redundant hardware. It also centralizes support teams, optimizing the use of USG internal human resources.

The technical architecture required to support the OneUSG implementation was extensive and required tight partnerships with member institutions to design a flexible framework. It was important to build a system that scaled but also ensured proper controls and data security. OneUSG positions the shared services center to provide transactional support and act as the primary contact for all USG employees and retirees. The conversion significantly reduces costs to institutions. It also enables USG to provide consistent and cost-effective support for its employees through its focused contact centers.

Redesigned Event Valuation Process

The Georgia World Congress Center

The World Congress Center's (GWCC) Redesigned Event Valuation Process sought to optimize room assignments, update cost prediction methods, and suggest profit margins. The resulting web application was strategically developed to help visualize event placement based on available space and client needs.

The application aids in prioritizing events, increasing net profit, and bolstering a sales team striving to increase revenue while keeping costs low. GWCC, along with eight industrial engineering seniors from the Georgia Institute of Technology, created the application from scratch. It uses a mixed integer linear model, a dimensional coordinate to reflect the maintenance of event services, and a weight coefficient for distance.

GWCC built the web-based room assignment model using Gurobi optimization to produce profit increases. Using data to help guide profit, the GWCC sales team can see the direct impact of their pricing decisions. This information encourages collaboration within the team to manage profit margins.

Appendix

Appendix A: Agencies Reporting IT Expenditures

	Agency Name	Reported 2018	Reported 2019	Reported 2020
1	Administrative Office of Georgia Courts	NR	NR	NR
2	Atlanta Regional Commission	NR	NR	NR
3	Board of Regents	NR	*	*
4	Brain & Spinal Injury Trust Fund Authority	✓	✓	✓
5	Council of Criminal Court Judges	*	*	*
6	Council of Juvenile Court Judges	*	*	*
7	Community Service Boards	NR	NR	NR
8	County Health Departments	NR	NR	NR
9	Court of Appeals	*	*	*
10	Criminal Justice Coordinating Council	✓	✓	✓
11	Department of Administrative Services	✓	✓	✓
12	Department of Agriculture	✓	✓	*
13	Department of Audits	*	*	*
14	Department of Banking and Finance	✓	✓	✓
15	Department of Behavioral Health and Developmental Disabilities	✓	✓	✓
16	Department of Community Affairs	✓	✓	✓
17	Department of Community Health	✓	✓	✓
18	Dept of Community Supervision	✓	✓	✓
19	Department of Corrections	✓	✓	✓
20	Department of Defense	✓	✓	✓
21	Department of Driver Services	✓	✓	✓
22	Department of Early Care and Learning	✓	✓	✓
23	Department of Economic Development	✓	✓	✓
24	Department of Education	✓	✓	✓
25	Department of Human Services	✓	✓	✓
26	Department of Juvenile Justice	✓	✓	✓
27	Department of Labor	✓	✓	✓
28	Department of Law	*	*	*
29	Department of Natural Resources	✓	✓	✓
30	Department of Public Health	✓	✓	✓
31	Department of Public Safety	✓	✓	✓
32	Department of Revenue	✓	✓	✓
33	Department of Transportation	✓	✓	✓
34	Department of Veterans Services	✓	✓	✓
35	Employees' Retirement System	✓	✓	✓
36	Georgia Aviation Authority	✓	✓	*
37	Georgia Board for Physician Workforce	*	NR	NR
38	Georgia Building Authority	✓	✓	✓
39	Georgia Bureau of Investigation	✓	✓	✓
40	Georgia Commission on Equal Opportunity	*	*	*

	Agency Name	Reported 2018	Reported 2019	Reported 2020
41	Georgia Commission on the Holocaust	NR	NR	NR
42	Georgia Correctional Industries		*	*
43	Georgia Council for the Arts	NR	NR	NR
44	Georgia Development Authority	*	*	*
45	Georgia Drugs and Narcotics Agency	*	*	*
46	Georgia Emergency Management Agency	✓	✓	✓
47	Georgia Environmental Finance Authority	NR	✓	✓
48	Georgia Firefighter Standards and Training Council	✓	*	NR
49	Georgia Firefighters Pension Fund	✓	*	*
50	Georgia Forestry Commission	✓	✓	✓
51	GA Gov Transparency & Campaign Finance Comm.	NA	NA	
52	Georgia Lottery Corporation	*	*	*
53	Georgia Peace Officer Standards & Training Council	*	*	✓
54	Georgia Peanut Commission	*	NR	NR
55	Georgia Ports Authority	*	*	*
56	Georgia Professional Standards Commission	*	*	*
57	Georgia Public Broadcasting	✓	✓	✓
58	Georgia Public Defenders Council	*	*	✓
59	Georgia Public Safety Training Center	✓	✓	✓
60	Georgia Public Service Commission	*	*	*
61	Georgia Public Telecommunications Commission	NR	NR	NR
62	Georgia Real Estate Commission & Appraisers Board	*	*	*
63	Georgia Seed Development Commission	NR	NR	NR
64	Georgia State Financing and Investment Commission	✓	✓	✓
65	Georgia Student Finance Commission	✓	✓	✓
66	Georgia Technology Authority	✓	✓	✓
67	Georgia Vocational Rehabilitation Agency	✓	NR	*
68	Georgia World Congress Center Authority	✓	✓	✓
69	General Assembly	*	*	*
70	Governor's Office of the Child Advocate	NR	NR	NR
71	Governor's Office of Highway Safety	✓	*	*
72	Governor's Office of Student Achievement	✓	✓	✓
73	Jekyll Island State Park Authority	*	*	*
74	Lake Lanier Islands Development	NR	✓	✓
75	Nonpublic Postsecondary Education Commission	*	*	*
76	Office of Commissioner of Insurance	✓	✓	✓
77	Office of Inspector General	✓	✓	✓
78	Office of Planning and Budget	✓	✓	✓
79	Office of State Administrative Hearings	✓	✓	*
80	Office of State Treasurer	✓	✓	✓
81	Prosecuting Attorneys' Council	*	*	✓
82	Secretary of State	✓	✓	✓
83	State Accounting Office	✓	✓	✓

	Agency Name	Reported 2018	Reported 2019	Reported 2020
84	State Board of Pardons and Paroles	✓	✓	✓
85	State Board of Workers' Compensation	✓	✓	✓
86	State Properties Commission	✓	✓	✓
87	State Road and Tollway Authority	✓	✓	✓
88	Stone Mountain Memorial Association	*	*	*
89	Subsequent Injury Trust Fund	✓	✓	✓
90	Superior Courts of Georgia	*	*	NR
91	Teachers' Retirement System	✓	✓	✓
92	Technical College System of Georgia	✓	✓	✓
*	Cost data through the Georgia Enterprise Technology Services (GETS) program			

NR in the "Reported 2018, Reported 2019, Reported 2020" column indicates that the agency did not submit a report because:

- The agency no longer exists.
- Its expenditures were included in the report from an agency to which it is administratively attached.
- The agency is attached to one of the state's constitutional agencies, which are exempt from filing the report.

Appendix B: Agency IT Expenditures

#	Agency Name	2020 IT Spend
1	Department of Administrative Services	$10,774,342
2	Department of Agriculture	$1,830,767
3	Department of Audits	$24,213
4	Department of Banking and Finance	$1,559,424
5	Department of Behavioral Health and Developmental Disabilities	$30,458,135
6	Department of Community Affairs	$4,569,130
7	Department of Community Health	$91,642,839
8	Department of Community Supervision	$10,703,974
9	Department of Corrections	$31,651,612
10	Department of Defense	$3,835,171
11	Department of Driver Services	$23,126,025
12	Department of Early Care and Learning	$21,286,256
13	Department of Economic Development	$635,932
14	Department of Education	$13,603,778
15	Department of Human Services	$94,561,469
16	Department of Insurance	$2,902,099
17	Department of Juvenile Justice	$20,397,707
18	Department of Labor	$13,509,764
19	Department of Law	$277,091
20	Department of Natural Resources	$12,751,912
21	Department of Public Health	$29,683,038
22	Department of Public Safety	$12,697,131
23	Department of Revenue	$45,039,556
24	Department of Transportation	$46,971,991
25	Department of Veterans Services	$762,257
26	Employees' Retirement System	$3,221,345
27	Georgia Bureau of Investigation	$18,614,501
28	Georgia Forestry Commission	$2,004,369
29	Georgia Public Defenders Council	$672,785
30	Georgia Public Service Commission	$82,357
31	Georgia State Financing and Investment Commission	$1,602,921
32	Georgia Student Finance Commission	$5,001,225
33	Georgia Vocational Rehabilitation Agency	$2,194,574
34	Office of Planning and Budget	$1,518,697
35	Office of State Administrative Hearings	$716,906
36	Secretary of State	$8,317,268
37	State Accounting Office	$22,060,375
38	State Board of Pardons and Paroles	$447,863
39	State Board of Workers' Compensation	$2,743,508
40	State Properties Commission	$55,122
41	Subsequent Injury Trust Fund	$120,888
42	Teachers' Retirement System	$4,219,651
43	Technical College System of Georgia	$36,114,688

Agencies Not Required to Report

#	Agency Name	2020 IT Spend
1	Board of Regents	$0
2	Brain & Spinal Injury Trust Fund Authority	$35,781
3	Council of Juvenile Court Judges	$5,321
4	Court of Appeals	$72,627
5	Criminal Justice Coordinating Council	$1,531,636
6	GA Government Transparency & Campaign Finance Commission	$239,000
7	Georgia Board for Physician Workforce	$0
8	Georgia Building Authority	$2,277,909
9	Georgia Commission on Equal Opportunity	$14,669
10	Georgia Correctional Industries	$37,095
11	Georgia Development Authority	$2,746
12	Georgia Drugs and Narcotics Agency	$85,119
13	Georgia Emergency Management Agency	$1,149,553
14	Georgia Environmental Finance Authority	$489,174
15	Georgia Firefighter Standards and Training Council	$0
16	Georgia Firefighters Pension Fund	$84,558
17	Georgia Lottery Corporation	$771
18	Georgia Peace Officer Standards & Training Council	$84,366
19	Georgia Peanut Commission	$4,448
20	Georgia Ports Authority	$315,627
21	Georgia Professional Standards Commission	$1,389,305
22	Georgia Public Broadcasting	$2,379,937
23	Georgia Public Safety Training Center	$1,828,951
24	Georgia Real Estate Commission & Appraisers Board	$27,957
25	Georgia Technology Authority	$26,303,357
26	Georgia World Congress Center Authority	$2,842,228
27	General Assembly	$136,005
28	Georgia Aviation Authority	$16,142
29	Governor's Office of Highway Safety	$209,441
30	Governor's Office of Student Achievement	$1,993,615
31	Jekyll Island State Park Authority	$80,382
32	Lake Lanier Islands Development Authority	$14,632
33	Nonpublic Postsecondary Education Commission	$600
34	Office of Inspector General	$69,966
35	Office of State Treasurer	$1,481,560
36	Prosecuting Attorneys' Council	$1,460,410
37	State Road and Tollway Authority	$4,337,592
38	Stone Mountain Memorial Association	$4,597
	TOTAL	$685,971,732

Appendix C: Georgia's Managed Technology Services Model

Technology Services Model

Sample GETS Agencies

	GTA Managed, Vendor Run	GTA Managed, Vendor Run	Agency Managed & Run
DHS			
DOR			
GBI			
DPH			

Network & Voice

Infrastructure & Servers

Applications

Sample Non-GETS Agencies

DOT

GTA Managed, Vendor Run

Agency Managed & Run

Agency Managed & Run

Georgia Technology Authority
47 Trinity Avenue, S.W.
Atlanta, Georgia 30034
gta.georgia.gov