Georgia Annual State IT Report FY 2018

Georgia Annual State Information Technology Report
FY 2018

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From the State Chief Information Officer

Statement by Calvin Rhodes, Chief Information Officer, State of Georgia

The speed and disruptive power of technological change are issues I often raise in discussions about the state's approach to IT. The pace of change is only going to increase, and with it comes even greater potential for disruption. They present us with great opportunities but also significant challenges.

Cybersecurity and broadband access in unserved communities have been at the forefront of the state's response to those challenges during the past year.

Georgia firmly established its leadership in cybersecurity with the opening of the Georgia Cyber Center in July 2018. The center is about partnerships and collaboration in training the next generation of cybersecurity professionals and developing innovative solutions to combat cybercrime. No individual sector can address cybersecurity alone, and the center, located in Augusta, brings together government, academia, law enforcement, the military, and the private sector in a setting unlike any other in the nation and designed specially to facilitate seamless interaction. The significance of the center to the security of both our state and our nation cannot be overstated, and the Cybersecurity section of the IT Report provides information about its development, resources, and programs.

In a related effort, we completed an important procurement that will enable us to offer an array of managed cybersecurity services to state agencies beginning in July 2019. We rely on a public-private partnership to provide technology services to state agencies, and the Managed Security Services contract will enhance the cybersecurity services already available through the Georgia Enterprise Technology Services (GETS) program. The Technology Services section lists the new cybersecurity services and discusses other significant technology procurements from last year.

Technology and internet access have become essential to all aspects of modern life, including business and economic development, education, public safety and law enforcement, health care, agriculture, and our own personal interactions. However, many rural communities in Georgia lack broadband services, which provide high-speed connections to the internet. The Georgia Broadband Deployment Initiative was established to promote broadband deployment in unserved communities, so they can participate fully in today's society and enjoy all the economic, educational, cultural, and other benefits technology makes possible. The initiative also focuses on partnerships and collaboration in bringing together government at all levels and the private sector to address this important issue, and the section titled Georgia's Approach to Rural Broadband includes an overview of the steps we've taken so far.

Georgia's approach to technology received a great deal of national recognition during the past year. I've long championed our state's use of technology to provide innovative services while enhancing government's operational efficiency, and it's gratifying to see our efforts acknowledged. Mostly notably, Georgia shared the number one spot with four other states in the 2018 Digital States Survey. We placed first in the nation in the category of Adaptive Leadership and were named among the top five states in the category of

Collaboration. The survey is conducted every two years by the Center for Digital Government, an independent research and advisory institute. The CDG also named Georgia a finalist in its 2018 Government Experience Awards, which recognize states, cities, and counties for their use of technology to enhance service delivery.

Meanwhile, Georgia Gateway, the state's consolidated system for determining eligibility for 10 public-assistance programs, received top honors in the State IT Recognition Awards in the category of Cross-boundary Collaboration and Partnerships. The awards are sponsored by the National Association of State CIOs.

The section titled Georgia's Information Technology Excellence offers more information about these and other honors we accrued last year.

The Executive Summary features more highlights from the IT Report, which is carefully structured and thoughtfully written to serve as an ongoing resource for you. Any feedback you'd like to provide for future reports would be sincerely appreciated.

Calvin Rhodes

Purpose

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 is also a requirement in the enabling legislation of the Georgia Technology Authority. It provides information to state leaders to help them make informed decisions about the state's investments in technology.

The report represents information technology for the state's executive branch agencies only, i.e., those reporting to the Governor. It does not include information regarding information technology matters in the legislative branch, judicial branch, statewide constitutionally elected officeholders, or the University System of Georgia. The data used to create the report come directly from executive branch agencies and enterprise systems of record. The data are compiled by GTA and reflect 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
- Georgia's Approach to Rural Broadband
- Information Technology Vision and Strategy
- Information Technology Investment Management
- Technology Services
- Digital Services Georgia
- Georgia's Information Technology Excellence
- Appendix

Executive Summary

The state of Georgia continued to make significant progress in FY 2018 in strengthening and expanding the technology services state agencies rely on to provide information and services to their constituents.

A major accomplishment for Georgia was the opening of the **Georgia Cyber Center in Augusta in July 2018**. The $100 million Cyber Center represents the single largest state government investment in a cybersecurity facility in the nation to date. A primary focus is workforce development, attacking the current and growing shortage of cybersecurity talent in the state and nation. Information about the new center can be found on page 13.

The **GTA Cybersecurity Workforce Academy** continued to move ahead in promoting cybersecurity awareness in FY 2018. **The academy graduated its first class on May 22, 2018.** The class was comprised of information security officers and other cybersecurity professionals from state agencies, and they received their official State Certificate of Completion during a ceremony at the Georgia Technology Authority. More information about the academy can be found on page 14.

Recognizing the importance of broadband availability to all Georgians, particularly in rural areas without high-speed internet access, 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. More information can be found in **Georgia's Approach to Rural Broadband** on page 17.

Georgia's vision for its use of technology in the future is captured in the **Georgia Enterprise IT Strategic Plan 2025.** The plan's intent is to assist Georgia government leaders in making informed technology decisions for their agencies. It establishes IT focus areas and goals and sets the technology direction for the state's IT enterprise.

In developing and maintaining the plan, GTA collaborates with technology leaders in Georgia state agencies, other states, and the private sector to understand business priorities for Georgia state government and the proven technologies that help achieve them. Information about the state's strategic planning process starts on page 19.

Tracking IT expenditures is one of GTA's statutory responsibilities. In FY 2018, agencies reported spending $730 million on IT infrastructure services, network services, application development and support, and related activities. The IT Investment Management section, starting on page 27, looks at these expenditures and the various ways in which the state manages its technology investments. Information on spending can also be found in the Appendix starting on page 51.

GTA continues to evolve technology services for state agencies, and FY 2018 saw a leap forward in the Georgia Enterprise Technology Services (GETS) program, the state's successful partnership with technology leaders in the private sector. GTA rebid Mainframe, Print and Mailroom/Courier, End User Computing, and Server services through its innovative Market Test and Rebid process, which matches agency business needs to the best-suited technology services available. A fifth procurement for GETS Managed Security Services was begun during the fiscal year and completed in November 2018. The **Technology Services** section, starting on page 35, includes information about these procurements and their benefits to state

agencies. The section also addresses new GTA service offerings called **GETS Ready**, "a la carte" services all agencies can purchase directly from technology providers. GTA acts as a service broker by pre-qualifying service providers and offering contracts with price ceilings.

The **state's official web portal, www.georgia.gov, and enterprise web-publishing platform** are making it easier for Georgians who want convenient, secure access to state services and information. See the **Digital Services Georgia** section on page 39.

Georgia continued to receive accolades in 2018 for its use of technology to enhance government services and operate more efficiently. Numerous awards and recognitions strengthened Georgia's already formidable reputation as a leader among states. These are detailed in the section titled **Georgia's Information Technology Excellence**, which starts on page 41.

The state of Georgia received a letter grade of A, the highest ranking possible, in the 2018 Digital States Survey. In addition, Georgia placed first in the nation in the category of Adaptive Leadership and was named among the top five states in the category of Collaboration.

Innovative technology projects are adding value to Georgia government and earning national recognition. Several of these projects are detailed starting on page 44. Here are a few examples.

- **Georgia Gateway** increased the number of assistance programs covered by the state's centralized eligibility application from three to 10, incorporating programs from the departments of Human Services, Community Health, Public Health, and Early Care and Learning.

- The Department of Early Care and Learning allows child care providers to perform many self-service functions using a web-based, mobile-ready app called **KOALA Provider Self-Service**.

- The **Service Review and Technical Assistance** tool from the Department of Behavioral Health and Developmental Disabilities helps state workers flag health, safety, and quality-of-life issues requiring action by service providers.

As this report demonstrates, GTA is 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

Georgia makes a bold move as a national leader in cybersecurity.

The state of Georgia strengthened its position as a national leader in cybersecurity with the July 2018 opening of the Georgia Cyber Center in Augusta.

Georgia Cyber Center

Since its creation in 2000, the Georgia Technology Authority (GTA) has continuously worked to make the state of Georgia's information technology infrastructure secure from cyber threats both external and internal. The state took a large step forward on January 11, 2017, when Governor Nathan Deal announced his vision for the Cyber Center in his State of the State address. The $100 million center represents the single largest investment in a cybersecurity facility by a state government to date. The center trains the next generation of professionals through education and real-world practice, and it supports innovative companies focused on technology to strengthen online defenses.

The state-of-the-art center spans 332,000 square feet in two adjacent buildings located on the Nathan Deal Campus for Innovation. Groundbreaking on the first of the two buildings, the Hull McKnight Building, took place on June 19, 2017, and the building opened on time and within budget on July 10, 2018. It is named in honor of James M. Hull and William D. McKnight, prominent business and community leaders in Augusta.

Groundbreaking for the second building, the Shaffer MacCartney Building, took place on January 3, 2018, and it is scheduled to open on January 10, 2019. It is named in honor of Michael Shaffer, Augusta University's executive vice president of strategic partnerships and economic development, and Teresa MacCartney, director of the Governor's Office of Planning and Budget. Both have had central roles in establishing the Cyber Center. The campus also includes a multi-level parking deck funded by the city of Augusta.

The center represents a unique public/private partnership that includes Augusta University, Augusta Technical College, the University System of Georgia's research institutions, the city of Augusta, the Georgia Bureau of Investigation, the Georgia Department of Defense, GTA, and other state, federal, and private-sector partners. It houses Augusta University's School of Computer and Cyber Sciences and Cyber Institute. Augusta's growing cybersecurity sector is home to the U.S. Army Cyber Command and Cyber School of Excellence at Fort Gordon.

The center is linked to certificate programs as well as undergraduate- and graduate-level programs in cybersecurity and cyber sciences. Offerings include both on-site and virtual courses. The Georgia Cybersecurity Workforce Academy is housed at the center and offers training for state and local government information security professionals. The center includes demonstration space to highlight cyber research activities under way across Georgia's university system, including basic and applied research activities at Augusta University.

A key component of the Cyber Center is the Georgia Cyber Range. The range is a heterogeneous computing environment used to practice incident response, conduct penetration testing, fuzz binaries across multiple processor architectures, and more. It provides tools that help strengthen the stability, security, and performance of cyber infrastructures and IT

systems. It is available to students, industry, and government professionals in education and training, product development, offensive activity and competition, detection and defensive competition, response and recovery, and evaluation and benchmarking.

The center houses the Georgia Bureau of Investigation's new cybercrime unit, and law enforcement professionals throughout the state are able to take advantage of the GBI's expertise in digital forensics.

The center provides incubation and accelerator programs through theClubhou.se, an Augusta-based non-profit, to support cybersecurity innovation and entrepreneurship.

Build-to-suit Class A space is available for lease to industry-related companies. In addition, a 340-seat auditorium is available for STEM-related events in line with the center's mission.

Learn more about the Cyber Center at www.cybercenter.georgia.gov.

GTA Cybersecurity Workforce Academy

The GTA Cybersecurity Workforce Academy continued to move ahead in promoting cybersecurity awareness in FY 2018. The academy graduated its first class on May 22, 2018. The class was comprised of information security officers and other cybersecurity professionals from state agencies, and they received their official State Certificate of Completion during a ceremony at the Georgia Technology Authority. The ceremony was hosted by GTA Deputy Executive Director Joe Webb and State Chief Information Security Officer Stanton Gatewood.

The attendees successfully completed 11 courses:

- Introduction and Basic Cybersecurity
- Roles and Responsibilities of an Information Security Officer in the Public Sector
- Building a Cybersecurity Program in the Public Sector
- Cybersecurity and IT Strategic Planning
- Cybersecurity Policy Management
- Cyber Incident Management
- IT and Information Security Risk Management
- Security Awareness, Training, Education, and Professional Development
- Continuity of Operations Planning Cyber Resilience
- IT and Cybersecurity Leadership
- Cybersecurity Maturity – Program

The GTA Cybersecurity Workforce Academy teamed up with the Georgia Cyber Center Academy in offering Certified Information Systems Security Officer training November 5-9, 2018.

GTA's academy is updating the courses listed above for FY 2019 and adding hands-on workshops to reinforce learning. An Introduction to Cyber Attack and Defense course will also be held.

Cybersecurity Review Board Assessments

The Statewide Cybersecurity Review Board's Working Group oversees cybersecurity assessments of state agencies that operate critical information systems or handle federally regulated data. The assessments are conducted by an independent, trusted third party in accordance with the cybersecurity framework established by the National Institute for Standards and Technology (NIST), requirements of the Health Insurance Portability and Accountability Act (HIPAA), and other recognized risk-focused assessment frameworks. A total of seven state agencies underwent a cybersecurity assessment in FY 2018. The assessments yielded a security assessment report, a gap analysis, a plan of action and milestones report, and a risk assessment report.

Georgia's Approach to Rural Broadband

Georgia promotes the development of broadband services for rural areas.

Broadband has become essential to business, education, healthcare, agriculture, and overall quality of life. Unfortunately, Georgians in many rural communities do not have high-speed access to the internet.

An estimated 1.6 million Georgians lack broadband access, according to 2014 data from the State Broadband Initiative.

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, with minimum speeds of 25 Mbps for downloads and 3 Mbps for uploads.

Accurate mapping of broadband availability is critical to identifying unserved locations and developing the Georgia Broadband Deployment Initiative. The initiative will assist communities in applying for federal funding to support comprehensive planning for broadband deployment.

The Georgia Department of Community Affairs (DCA) is developing a statewide map of unserved areas at an address level by census block. DCA's mapping strategy includes two phases. In Phase I, DCA will deploy an initial map of unserved areas on January 1, 2019. Phase II involves a pilot project in which address-level details will be gathered in three counties.

DCA and the Georgia Technology Authority (GTA) are leading the Georgia Broadband Deployment Initiative in collaboration with the Department of Economic Development, the State Properties Commission, and the Department of Transportation.

Considerable progress has been made since the ACE Act's passage:

- Created a new Executive Director of Broadband position within DCA to oversee the Georgia Broadband Deployment Initiative and ACE implementation
- Established a framework and governance for ACE implementation
- Established an advisory committee comprised of broadband service providers and local government representatives; conducted the committee's first meeting
- Established stakeholder working groups for model ordinances and mapping
- Kicked off the Phase 2 mapping pilot in three counties with eight broadband service providers
- Established Broadband Ready Designations for communities that prioritize broadband expansion and for sites with 1 Gbps service
- Initiated grant program rules for further development in 2019
- Conducted briefings for the Georgia Municipal Association, the Association County Commissioners of Georgia, broadband service providers, and Georgia's electric membership corporations

The team continues to build a strong foundation to extend broadband services across the state, strengthen rural Georgia, and make Georgia the number-one state for small businesses.

Information Technology Vision and Strategy

The Strategic Plan 2025 was created to guide agencies' technology decisions.

Georgia's vision for its use of technology in the future 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 and can be accessed at https://gta.georgia.gov/it-strategic-plan-2025.

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

The strategic plan does not replace the business-oriented plans of individual state agencies but serves as a secondary vision document to help them align their technology with the direction established for the state's IT enterprise.

In developing and maintaining the plan, GTA collaborates with technology leaders in Georgia state agencies, other states, and the private sector to understand business priorities for Georgia state government and the proven technologies that can help achieve them. 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
- Leveraging emerging technologies to improve interactions between Georgia agencies and their constituents
- Evolving state government's 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

Strategic Planning

The goal of IT strategic planning in Georgia is to understand agencies' business objectives and guide them in using appropriate technology to achieve those objectives. Agencies are also guided in their business objectives by the Governor's policy priorities.

During FY 2018 and previous years, agencies were guided in their business objectives by Governor Nathan Deal's policy priorities, which set specific goals in the areas of jobs and the economy, education, transportation and infrastructure, criminal justice reform, health care, and natural resources.

With a new administration coming into office in January 2019, agencies will need to align their IT strategies with the new governor's business objectives. Given the maturity of Georgia's strategic IT planning process, it is anticipated that agencies will quickly align their IT strategies with the new objectives.

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 for Georgia. 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:

Scan Technology Enablers

Technology scanning is a continuous process of gathering information about how technology is helping Georgia state agencies meet their objectives. It identifies what is relevant for state agencies and shares appropriate findings through periodic reports and presentations. When targeted to business needs, this information helps agencies make more effective use of proven technology. 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, we monitor a broad range of publications and participate in professional organizations and in national summits, conferences, and symposia targeting effective application of technology to business problems.

Survey Agency Priorities

GTA places high value on understanding agency business needs and will continue 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

The Georgia Enterprise IT Strategic Plan establishes focus areas and goals for the state's IT enterprise in a multi-year look ahead. In doing so, it guides agency IT leaders in choosing new technology solutions that align with the state's enterprise IT vision and direction.

The enterprise strategic plan was first published in 2014 and provided a 7-year forward look at technology. GTA recently established an update schedule that calls for a new version to be published every four years (in the year after each Georgia gubernatorial inauguration). In addition, GTA now publishes an annual addendum to refresh the enterprise strategic plan and adjust for emerging uses of technology. The process also allows for adjustment to support new leadership policy initiatives. The 2025 plan is available at https://gta.georgia.gov/it-strategic-plan-2025. An annual addendum to the 2025 plan is to be posted on the GTA site in early calendar year 2019.

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 on page 44.

GTA also works closely with the Governor's Office and the Office of Planning and Budget to identify agency and statewide business needs that are ripe for new applications of technology. GTA provides leadership in identifying and adopting proven technologies to solve pressing government issues.

Host Technology/Strategy Summit

GTA's annual Technology/Strategy Summit, first launched in 2012, has gradually shifted focus to address 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.

More than 250 state employees and vendors attended the 2018 summit, which took place July 11 at the Georgia Cyber Center in Augusta and whose theme was "Strengthening Georgia's Cyber Defenses." The summit explored the current cybersecurity landscape, its pervasive risks, and the state's efforts to stay ahead of them. Session topics included the dark web, cybercrime, cybersecurity workforce development, cyber ranges, innovative defenses, and security policy.

Strategic Planning Survey – 2018 Results

This section reports on the annual survey of agencies about their strategic objectives.

In 2018, GTA continued its annual survey of agency CIOs 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 at leveraging innovations in a rapidly changing technology environment and ensuring better support for state operations. Agency data are also used to update the Georgia Enterprise IT Strategic Plan.

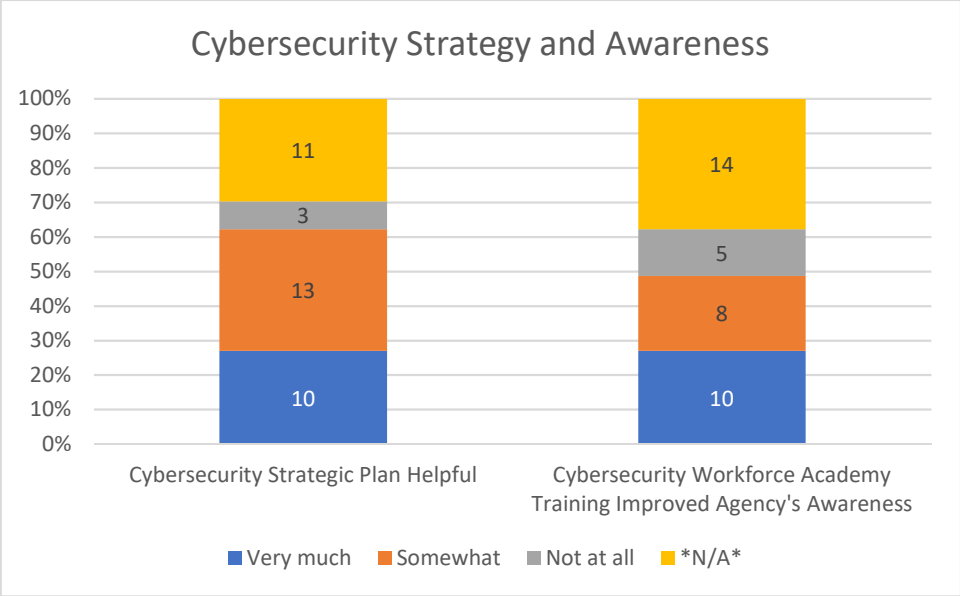
The first part of the IT strategy survey focused on the following areas related to enterprise IT objectives:

- Cybersecurity
- Data management
- Digital services

A total of 37 agencies responded to the survey. Highlights from the results are presented in the graphics below.

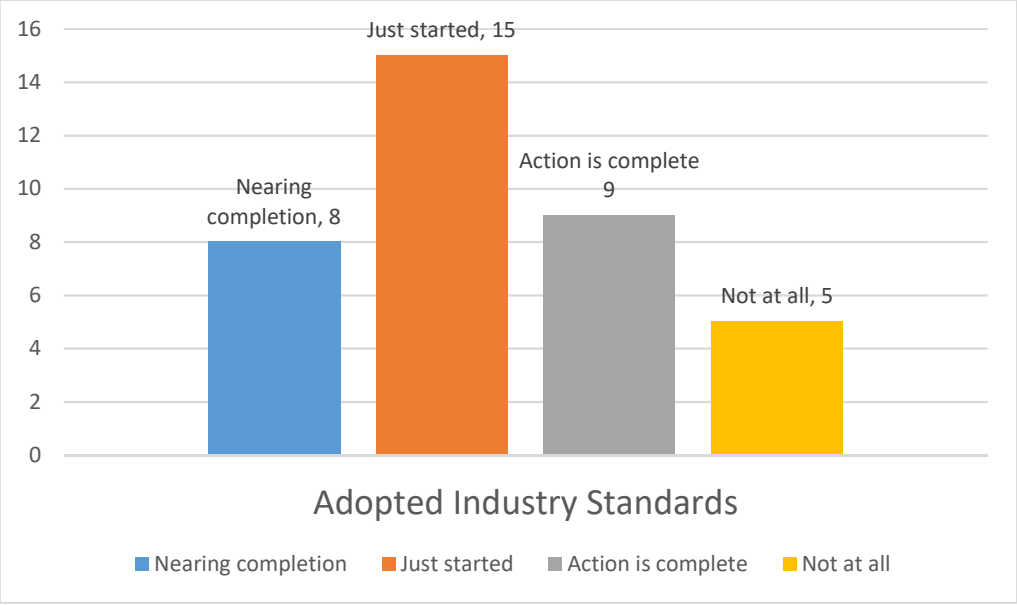
Cybersecurity

- To what extent has the Georgia Cybersecurity Strategic Plan been helpful in developing your agency's cybersecurity plan?
- To what extent has GTA Cybersecurity Workforce Academy training improved your agency's cyber awareness, preparedness, and resilience?

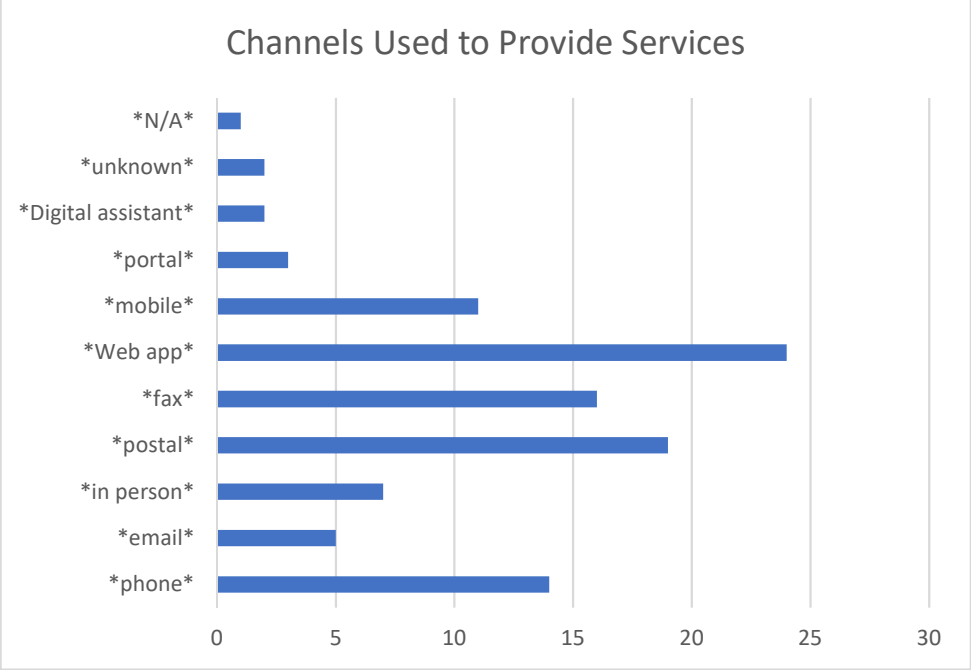


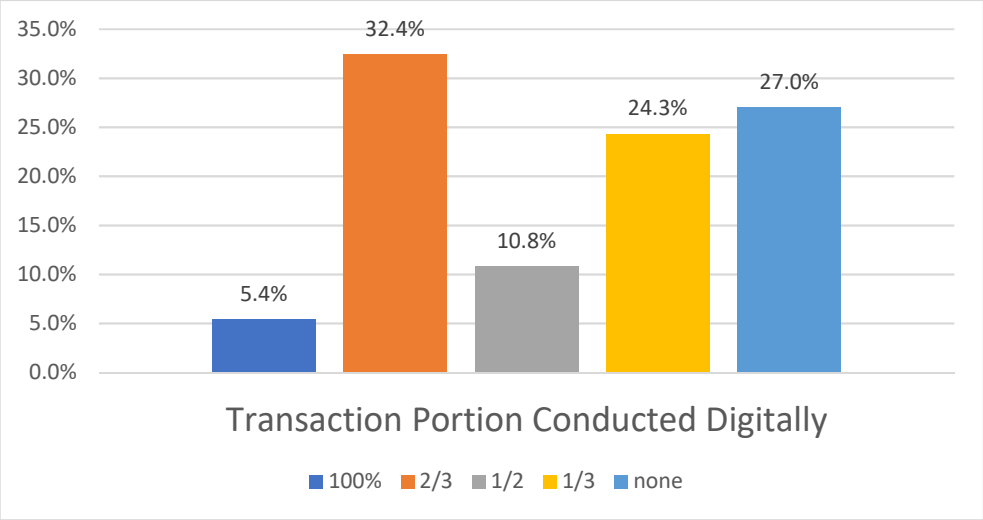
- To what extent has your agency adopted any industry data standards for organizing data for use within your agency?
- Is your agency sharing agency data with other agencies?
- Has your agency assigned a data steward to act as liaison for cross-agency data sharing?

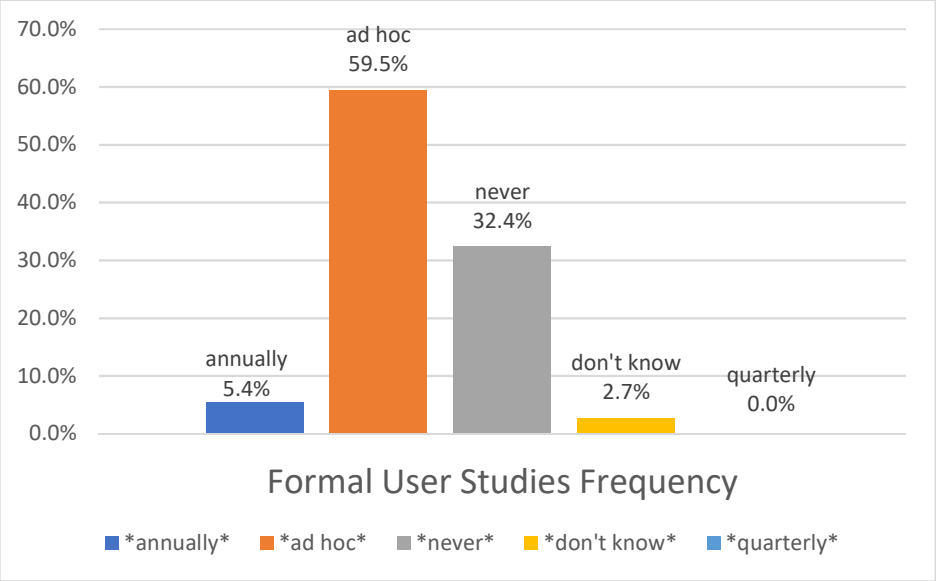
The breakdown of the first question is below. The responses to the second and third questions are that 73% shared data with other agencies and 63% of agency CIOs or IT directors were aware that their agency had a data steward.



- 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?



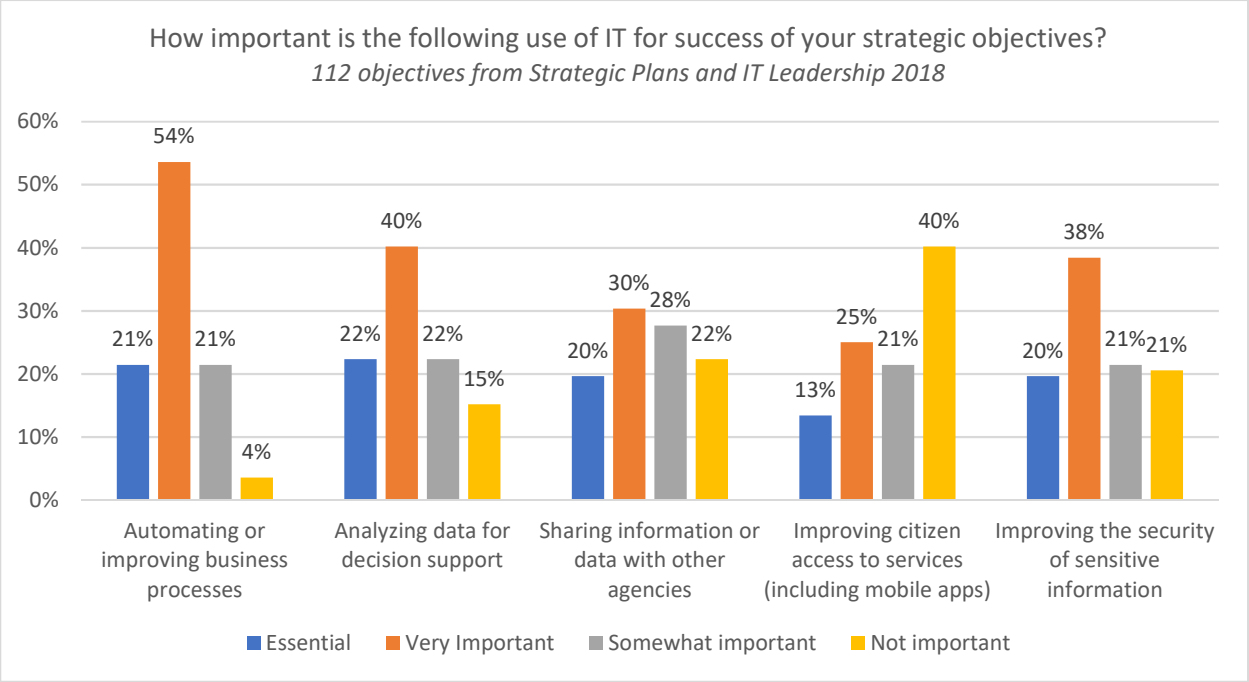




The second part of the IT strategy survey focused on individual agencies' strategic objectives. It asked agencies to rate the importance of information technology in supporting their activities in the following areas:

- 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 112 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 of your strategic objectives?
112 objectives from Strategic Plans and IT Leadership 2018
60%
50%
40%
30%
20%
10%
0%
21%
54%
21%
4%
22%
40%
22%
15%
20%
30%
28%
22%
13%
25%
21%
40%
20%
38%
21%
21%
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
Essential
Very Important
Somewhat important
Not important

Information Technology Investment Management

The State Annual Report Register collects data about IT expenditures in five different categories.

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.

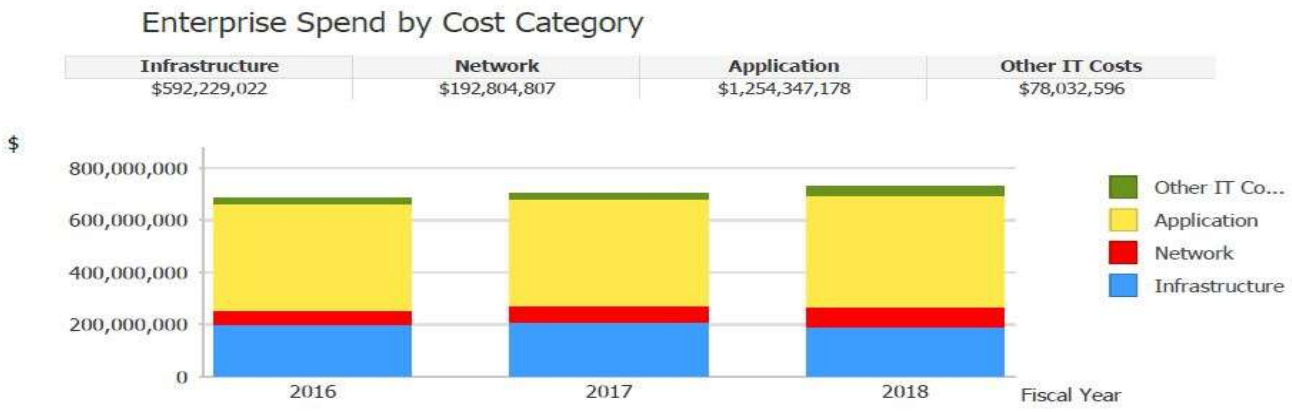
The General Assembly has charged the Georgia Technology Authority (GTA) with compiling information from executive branch agencies about their IT expenditures and presenting a report to state leaders every year (O.C.G.A. 50-25-7.10). With comprehensive and accurate information, state leaders can make facts-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 2016, FY 2017, and FY 2018.



Fiscal Year	Infrastructure	Network	Application	Other IT Costs	Total
2018	$188,610,059	$76,336,492	$429,599,052	$35,621,948	**$730,167,551**
2017	$207,384,180	$60,777,376	$412,943,419	$20,300,534	**$701,405,509**
2016	$196,234,783	$55,690,939	$411,804,706	$22,110,114	**$685,840,543**

Agency Participation in IT Expenditure Reporting

Agency compliance with requirements for reporting IT expenditures decreased from FY 2017 to FY 2018. A total of 54 out of 58 agencies submitted a report, or 93%, which compares to 96% in FY 2017.

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 2018" column did not submit reports because:

- The agencies no longer exists.
- Their expenditures were included in the report from an agency to which they are administratively attached.
- The agencies are 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 increase in FY 2018?

Participating agencies spent over **$730 million** on technology in FY 2018, more than the **$701 million** reported in FY 2017. The difference is attributable to:

- More accurate application costs captured in the application inventory.
- More accurate IT Full-time Equivalent costs.

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

IT Investment Support

Georgia continues to mature its Governance Support model by working with agencies during the planning phases of new information technology investments. As technology continues to transition to service-based solutions, the state has begun to see an increasing number of technology purchases conducted outside the confines of traditional IT organizations.

To address this migration from products to services, the state has adopted a more current definition of technology investments:

> *An investment in any product or service that consists of, or relies upon, information technology to capture, process, store, share or otherwise manipulate data that is managed by a state entity.*

In 2018, GTA expanded the established investment-support processes to address this emerging trend.

Annual Investment Strategy Sessions

GTA's investment strategy sessions in 2018 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 32.

Procurement Reviews

GTA enhanced the procurement review process to provide more proactive support as agencies plan for large investments. A Procurement Review Checklist is provided at the initiation of the process so agencies are aware of key elements to include in procurement documents, including recommended language for technology requirements, terms, and conditions. The checklist has shortened the time it takes GTA to review procurements and allowed for better collaboration during development of a Request for Proposal (RFP), thereby ensuring Georgia receives the best value possible.

GTA's procurement review process continues to provide valuable feedback as agencies navigate complex RFPs and provider Service Agreements. Over the past year, GTA reviewed more than 12 sets of procurement documents, including RFPs, Requests for Information (RFIs), Scopes of Work (SOWs), and contracts representing over $100 million in investments.

Collaboration with State Purchasing

GTA and the Department of Administrative Services (DOAS) continued a successful collaboration to support agency technology needs. For the second consecutive year, they partnered in educating procurement offices about best practices and lessons learned for technology procurements at the 2018 State Purchasing Conference.

The two agencies also joined forces to identify Georgia-specific requirements and contract specifications for a cloud contract managed by the National Association of State Procurement Officers (NASPO). This contract has a stable of preapproved vendors qualified to provide cloud-type solutions to any participating state. GTA and DOAS successfully negotiated the first of several planned Participatory Agreements from this contract to help agencies meet immediate needs for quickly implementing non-critical solutions.

Accountability, Change Management and Process Improvement Act of 2015 (HB 676)

GTA provides guidance and resources to assist agencies in complying with the legislative requirements of the Accountability, Change Management and Process Improvement Act of 2015 (HB 676). A template and content checklist have been developed for agencies to use when writing a business case for a technology investment; HB 676 requires the submission of a business case to the Governor's Office of Planning and Budget (OPB) along with a request for project funding. In addition, GTA has established a contract with five pre-qualified providers of Organizational Change Management (OCM) services; agencies can use the contract to obtain the services they need to effectively manage change. GTA has collaborated with

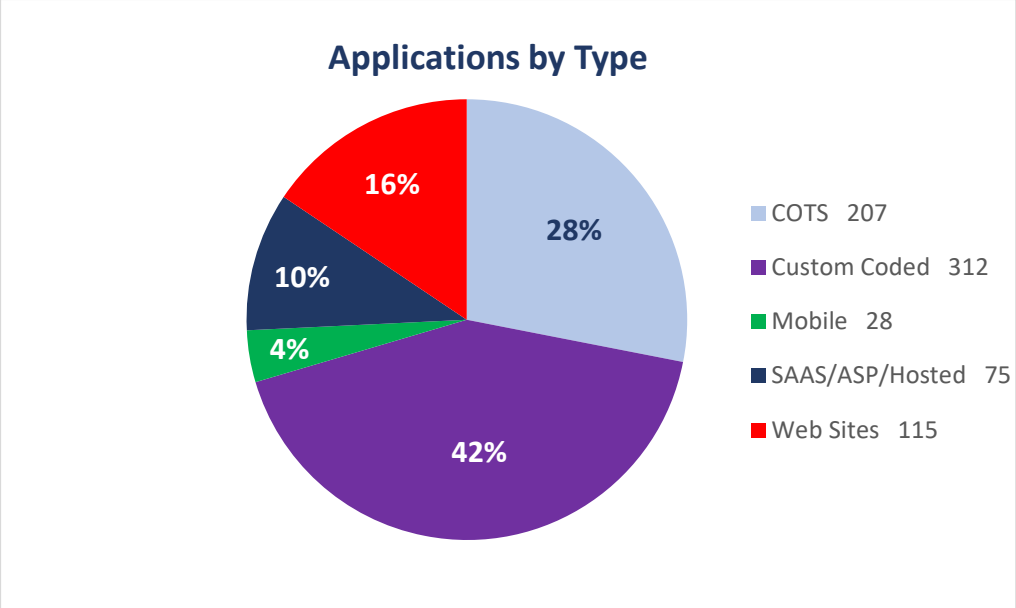
Prosci, a global leader in OCM research and training, to make OCM training and certification available to agencies so they can develop their own internal resources.

GTA conducted an awareness campaign in 2017 to educate agencies about the business case and OCM requirements established in HB 676. This year's efforts focused on execution of processes to support the legislated mandates. The OCM plan as outlined in the legislation was added to the list of key deliverables that are reviewed as part of project assurance processes for each technology initiative. Agencies are also asked to update the status of OCM activities during their monthly reporting to the Critical Project Review Panel. GTA has partnered with OPB to review business cases submitted as part of budget requests and consulted with agency business personnel to provide feedback and recommendations.

In recognition of the value of OCM, the state has funded certification training for over 40 individuals across 18 agencies. GTA participated by sending a member of its Enterprise Portfolio Management Office to the training and is now working with a multi-agency team to establish an OCM network across the state. The goal is to increase subject matter expertise in this competency to make Georgia better able to adapt in an era of constant business and technology changes.

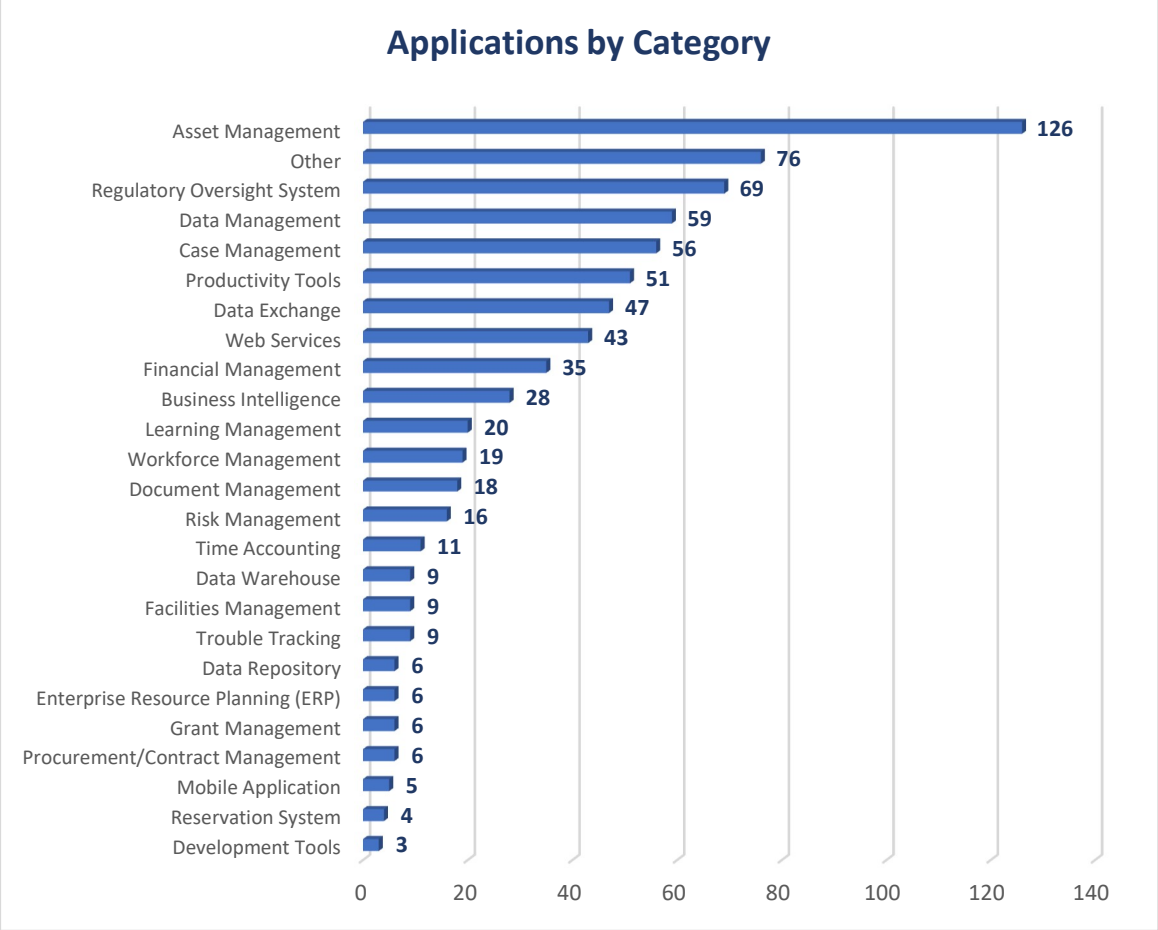
IT Application Portfolio

The state's IT Application Portfolio included 737 applications in FY 2018, an increase of 168 since FY 2013. The following graph shows the number and percentage of applications by type.



Applications by Category (737 Applications)

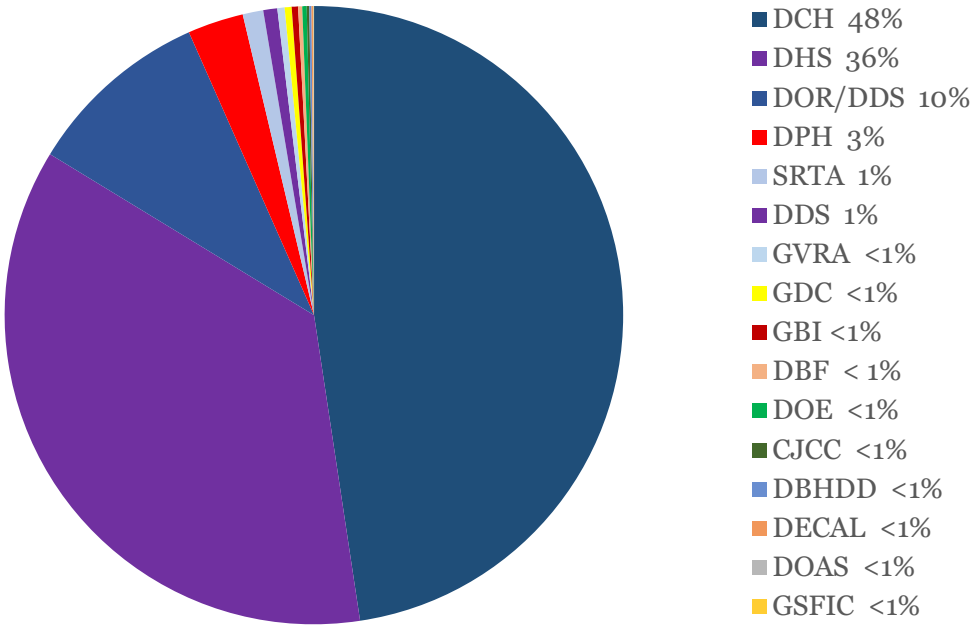
The following graph shows the number of applications by category.



Planned New Investments by Agency

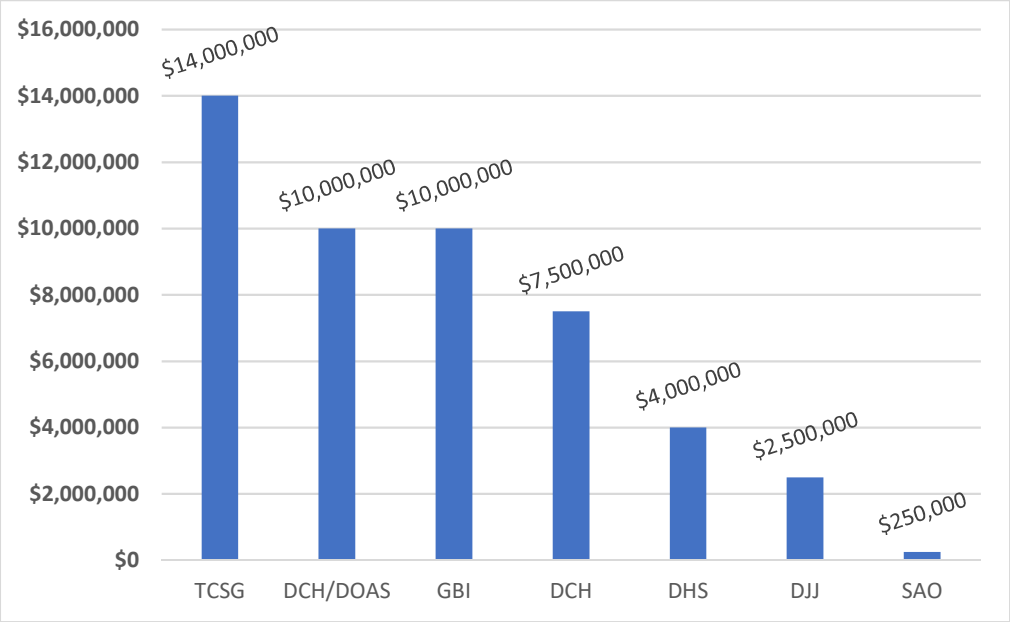
The FY 2018 total project portfolio of $1.13 billion shows a significant increase since FY 2015, primarily due to the growing number of IT projects undertaken in the healthcare sector. The FY 2018 portfolio is tracking over 51 active projects in 18 agencies. The projects total over $1.13 billion and span multiple years. In addition to the active projects, several large projects totaling $48 million are in the planning phase.

The following graph depicts each agency's percentage of the total budget for all active projects.



Department of Community Health (DCH)	$539,240,998	48%
Department of Human Services (DHS)	$408,993,251	36%
Department of Revenue (DOR)/Department of Driver Services (DDS)	$109,472,076	10%
Department of Public Health (DPH)	$33,071,611	3%
State Road and Tollway Authority (SRTA)	$12,189,896	1%
Department of Driver Services (DDS)	$8,275,000	1%
Georgia Vocational Rehabilitation Administration (GVRA)	$4,412,698	< 1%
Georgia Bureau of Investigation (GBI)	$3,999,325	< 1%
Department of Banking and Finance (DBF)	$3,700,000	< 1%
Department of Education (DOE)	$2,596,640	< 1%
Criminal Justice Coordinating Council (CJCC)	$2,477,000	< 1%
Department of Behavioral Health and Developmental Disabilities (DBHDD)	$1,610,000	< 1%
Department of Early Care and Learning (DECAL)	$1,250,000	< 1%
Department of Administrative Services (DOAS)	$950,000	< 1%
Georgia State Financing and Investment Commission (GSFIC)	$399,000	< 1%
	$1,132,697,697	

The following graph depicts the several large projects totaling $48 million that are in the planning phase.



Technical College System of Georgia (TCSG)	$ 14,000,000
Department of Community Health (DCH)/Department of Administrative Services (DOAS)	$ 10,000,000
Georgia Bureau of Investigation (GBI)	$ 10,000,000
Department of Community Health (DCH)	$ 7,500,000
Department of Human Services (DPH)	$ 4,000,000
Department of Juvenile Justice (DJJ)	$ 2,250,000
State Accounting Office (SAO)	$ 250,000

The following projects are represented in the graph above.

New planned investments:

- Department of Community Health (DCH) – Electronic Visit Verification
- Department of Community Health (DCH) – Pharmacy Benefits Manager
- Department of Community Health (DCH) – Third-Party Liability
- Department of Community Health (DCH)/Department of Administrative Services (DOAS) – Employee Benefits Platform
- Department of Human Services (DHS) – Child Support Disbursement Services
- Department of Juvenile Justice (DJJ) – Body Cameras and Support Services
- Georgia Bureau of Investigation (GBI) – LEMS Replacement
- State Accounting Office (SAO) – Internal Controls System
- Technical College System of Georgia (TCSG) – WorkING

Project Delivery Effectiveness

Large IT Project Board

GTA has utilized its Critical Project Review Panel as the primary governance body for complex and risky projects in the state's portfolio. However, for projects costing over $10 million, the panel continues to see a variety of situations that could be addressed

with even closer oversight and direction. The new Large IT Project Executive Decision-Making Board policy was enacted by GTA, OPB, and DOAS at the start of 2017. It specifies new top-level management of the state's large, multifaceted, and lengthy IT projects. The policy establishes a governing board whose permanent members are the DOAS Commissioner, the State CIO and GTA Executive Director, and the State Budget Officer, along with agency heads who rotate on and off the board based on the project under evaluation. The board meets on a regular basis to review and make business decisions affecting selected large, critical projects.

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 2018, the Critical Project Portfolio was valued at $956 million and encompassed 13 projects in 10 agencies.

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

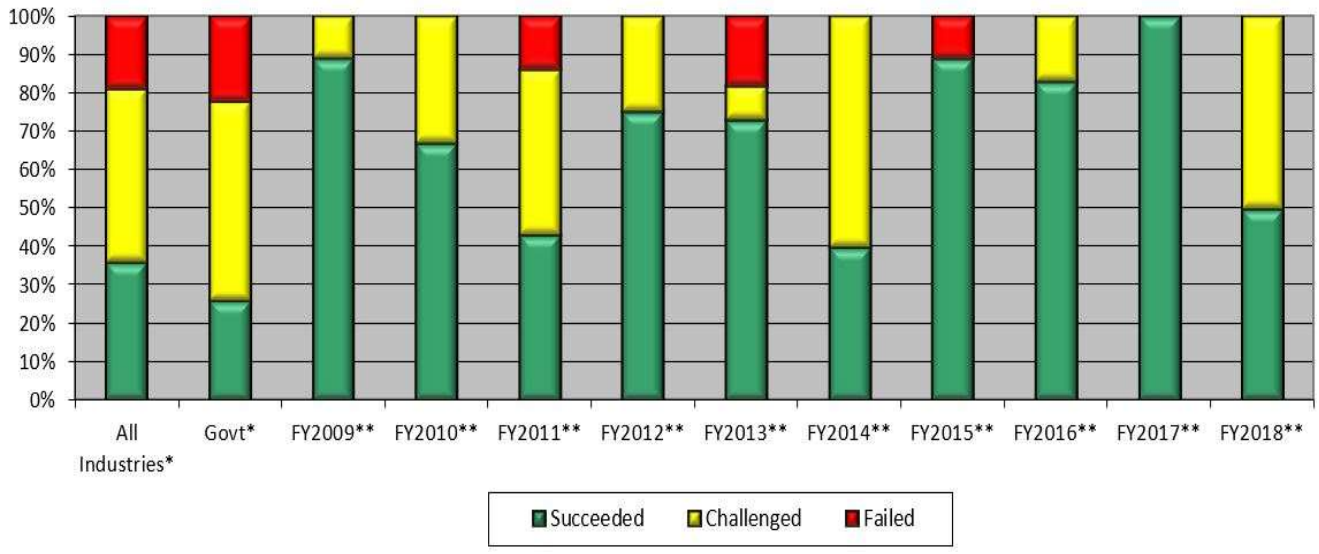
Applying industry statistical information (based on the Standish Group's 2017 CHAOS Report) to our current active and approved portfolio of critical projects yields the following projected results:

- 22% of projects would be cancelled = $210.3 million
- 52% would cost 189% of the original estimate = $940 million
- 26% would be successful with no cost increase = $248.5 million

Without disciplined project, program, and portfolio management, the current portfolio of $956 million would deliver only 78% 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 2017 CHAOS Report for technology projects. It measures only critical IT projects that were completed in each fiscal year. The chart indicates an increase in challenged projects from FY 2017 to FY 2018. Of the 13 projects in the Critical Project Portfolio, two were completed during FY 2018.

Project Delivery Effectiveness (by % of $) FY 2018



Technology Services

Georgia's enterprise IT environment continued to evolve by matching agency business needs to the best-suited technology services available.

GTA continued to evolve technology services for state agencies in FY 2018. The state's successful partnership with technology leaders in the private sector, known as the Georgia Enterprise Technology Services (GETS) program, has received a great deal of attention from other states and demonstrated a viable alternative to states developing and delivering technology services themselves. Over 100,000 workers spread across 1,400 state and local government locations received managed network services through GETS in FY 2018. In addition, GETS provided IT infrastructure services to 58,000 state workers and hosted 47,000 e-mail accounts, and the state's primary data center offered 1.5 petabytes of storage space. (A petabyte is defined as one quadrillion bytes.)

New GETS Vendors Established

FY 2018 saw a leap forward in the GETS program. Four re-procurements led to the installation of four vendors that moved Georgia's managed IT services to a new level of maturity. The four re-procurements addressed Mainframe services, Print and Mailroom/Courier services, End User Computing services, and Server services.

The considerable savings realized through these re-procurements made a new procurement for managed security services possible. This new procurement was completed in November 2018.

A clear priority in all the transitions to new service providers was safeguarding the system performance GETS customer agencies rely on. That was accomplished through knowledge transfer, shadowing, and reverse shadowing between outgoing and incoming providers. In addition, the new service providers were integrated into GETS' shared processes and tools for delivering services, thereby maintaining continuity of the GETS business practices agencies have come to know.

Each transition was more than just a change in service provider. It brought updated services that best suit the evolving business needs of GETS customer agencies. Representatives from those agencies provided invaluable input for the re-procurement process to help ensure their business needs were addressed by the new services.

Mainframe Services

IT services company Atos is the new vendor providing GETS mainframe services. This came after a months-long, carefully coordinated handoff from former mainframe services provider IBM.

Mainframe processing continues at the state's North Atlanta Data Center. Storage and virtual tape systems are also updated there, and a backup mainframe environment was established at an Austin, Texas, data center.

In coordination with Atos and services integrator Capgemini, GTA performed a GETS mainframe upgrade during FY 2018. The new central processing unit aligned mainframe capacity with agencies' needs and improved mainframe processing. To help ensure a smooth transition, agencies participated in mainframe application testing in conjunction with the upgrade.

Print and Mailroom/Courier Services

Xerox has been providing print services since the beginning of the state's shared IT services program in 2009, and now with a new contract, the company is stretching its reach to serve even more customers in new and enhanced ways. The new contract delivers not only enhanced print services but also mailroom and courier services from the Capitol Hill Mailroom in Atlanta's Twin Towers building. That allows customers to print, package, and mail, all through a single provider.

End User Computing Services (EUC)

During FY 2018, NTT DATA began providing EUC services through the GETS program. These services center on the computer on state workers' desks and the technicians who help if there's a problem with their computers. They also encompass tools like anti-virus and encryption software that protect computers, network printers, and refreshing laptop and desktop computers and network printers on a regular schedule.

Automated refresh notifications, self-service scheduling of refresh appointments, and automated reminders and refresh completion acknowledgements are being introduced along with an enhanced EUC hardware depot. The enhanced depot will enable the delivery of most standard EUC catalog items within five days.

NTT DATA will deliver more complete software license management information to GETS customer agencies, helping agencies ensure licensing compliance. In addition, NTT DATA envisions something brand new to GETS – a kind of micro EUC support center. Called a tech bar, it can be ordered and situated right on the premises of an agency's office space.

Server Services

GTA awarded a contract for server services to Unisys in FY 2018. Unisys is scheduled to begin providing services on January 1, 2019, as responsibility transfers from IBM, the provider of server services since 2009, following the expiration of its contract. Server services encompass server hardware, whether hosted in the state's North Atlanta Data Center or elsewhere, along with identity and directory management, disaster recovery, and storage services. Cloud broker services will be introduced to help guide choices that may involve cloud computing services.

Other Network Services

In addition to the major IT infrastructure services renegotiated in 2018, Wireless WAN Backup and Voice over IP services were added to the GETS program's portfolio of network services.

Managed Security Services

A new procurement for managed network services was begun in FY 2018. They are an important addition to the GETS shared IT services platform that was made possible by the considerable savings identified through the IT infrastructure services re-procurements. The aim is to enhance the security services already provided to the GETS community, ensuring access to specialized resources, advanced technology, and dedicated support. More specifically, GTA is looking to add a centralized security operations center; a

governance, risk management, and compliance capability; and a security incident and event management function.

GTA completed the procurement in November 2018, and services are expected to be available to agencies by July 1, 2019.

GETS Ready

The GETS Ready program offers "a la carte" services that agencies can purchase directly from technology providers. GTA acts as a service broker by pre-qualifying service providers and offering contracts (referred to as convenience contracts) with price ceilings. Many of the contracts include multiple providers with whom agencies can negotiate directly to obtain standard, commercial services. Agencies can easily compare offerings from different providers and are responsible for managing their relationships with providers.

Georgia-based public entities whose procurement departments allow purchases from state contracts are eligible to participate in the GETS Ready program. These entities include cities, counties, political subdivisions such as Boards of Health and Boards of Education, public universities, and local courts.

The program makes it easier for public entities to procure technology services while expanding their purchasing power at the same time. In addition, the services are tailored to the special needs of government entities. Service offerings in 2018 included:

- Wireless communications devices and services
- Hosted contact center
- Oracle licensing
- Teleconferencing
- Mainframe
- Managed desktop
- Managed security
- Servers and storage
- Telecommunications

At the end of FY 2018, the GETS Ready program had grown to over $100 million in annual contract value.

Digital Services Georgia

Digital Services Georgia continues to evolve the state's enterprise web publishing platform and its services to meet the online needs of Georgia's citizens.

Office of Digital Services Georgia (DSGa)

The Office of Digital Services Georgia (DSGa) manages the digital strategy for state agencies and elected officials to cultivate a mature digital presence and citizen-centric service delivery. The focus of DSGa expands GTA's view of the technology landscape from larger systems to granular interactions that the state offers via consumer devices. Citizens access state digital properties through channels that didn't exist a couple of years ago. To be able to serve this need, DSGa enables an omni-channel approach to leverage relevant citizen interactions by keeping content consistent and centralized.

FY 2018 Activities

Agile modular procurement

DSGa procured qualified vendors within four specialty pools:

- Branding and design
- Development
- Enterprise content
- User experience

An agile contracting vehicle breaks large, high-dollar projects into smaller, short-term contracts. This approach segments risk and offers transparency.

Building a compliant digital platform

DSGa has started efforts toward the first major digital services project – a digital platform built with the following considerations in mind.

Compliance: Adhering to best practices and standards

In December 2018, the GTA Board of Directors approved a new Digital Compliance Policy, which aims to implement best practices in digital design and development to ensure a modern digital presence for the state.

Consistency and trust: Single source of truth for content and design

Citizens access state information via several channels and devices. If the information in one channel varies from that in another, organizations lose public trust. A single source of truth for content and design enforces a consistent experience, helps establish that trust, and ensures a consistent message throughout an organization.

Collaboration: Built with the people

Successful digital initiatives hinge upon understanding the needs of people who interact with the state's digital properties, including end users and content managers in state agencies. DSGa bases development on more than just empirical research, data, and a few assumptions. DSGa's plan is to collaborate not only to continually understand users' characteristics, needs, and challenges but also to bring them into the conversation before decisions are finalized. This creates an open collaboration project from the beginning.

Analytics BETA website

DSGa launched https://analytics.georgia.gov/, a data dashboard that provides a window into how people interact with the various agency websites that are hosted on the state's enterprise platform, which is managed by DSGa. The data come from a unified Google Analytics account for state agencies. The program does not track individuals, and the IP addresses of visitors are anonymous.

The DSGa platform brought four new agencies onto the enterprise platform in FY 2018:

- Georgia Cyber Center (https://cybercenter.georgia.gov)
- Georgia Nonpublic Postsecondary Education Commission (GNPEC) (https://gnpec.georgia.gov/)
- Environmental Protection Division (EPD) / Water Planning (https://waterplanning.georgia.gov/)
- Office of Planning and Budget (OPB) / Census (https://census.georgia.gov/)

In preparation for the 2020 census, OPB commissioned a website to provide information to citizens, local count committees, and volunteers. The website is designed to promote census education and participation in Georgia.

There are currently **928 active content managers** on the DSGa platform.

There are currently **87 websites** on the state's enterprise platform.

Usability Testing – Georgia Public Safety Training Center (GPSTC)

DSGa consulted with GPSTC to design and conduct usability testing on the center's new website, https://www.gpstc.org. Prior to the redesign, GPSTC asked DSGa to help its team develop relevant skills to maintain their website. After the launch, GPSTC was interested in learning where users were still struggling to find information on the site and in recommendations for improving the website's usability.

Georgia's Information Technology Excellence

Innovative technology projects are adding value to Georgia government at the state and local levels and earning national recognition.

Georgia continued to receive accolades in 2018 for its use of technology to enhance government services and operate more efficiently. The following awards and recognitions strengthened Georgia's already formidable reputation as a leader among states.

Georgia Earns Highest Grade Possible in 2018 Digital States Survey

The state of Georgia received a letter grade of A, the highest ranking possible, in the 2018 Digital States Survey. In addition, Georgia placed first in the nation in the category of Adaptive Leadership and was named among the top five states in the category of Collaboration.

The survey is conducted 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 government. The survey evaluates all 50 states' use of technology to improve service delivery, increase capacity, streamline operations, and reach policy goals, and each state is assigned a letter grade based on quantifiable results.

Under the Digital States Survey criteria, a letter grade of A indicates a state "is trending sharply upward. They show results across all survey categories. Modernization is used to realize operational efficiencies and strategic priorities. There is evidence of meaningful collaboration, and performance measures and metrics are widely adopted."

Georgia's letter grade of A is an improvement from the last survey in 2016, when the state received an A-. Georgia is one of only five states to receive an A in the 2018 survey. The other states are Michigan, Missouri, Ohio, and Utah.

The category of Adaptive Leadership measures how well a state's technology investment strategies match the top policy priorities of the governor, the legislature, and the public.

The survey evaluated states for actions supporting priorities and policies to improve operations and services, hard- and soft-dollar savings and benefits, progress since the previous survey, innovative and citizen-centric services, and effective collaboration. The survey is designed to highlight best and emerging technology practices that serve as models to be shared across state borders.

For more information, visit www.govtech.com/cdg/digital-states/Digital-States-Survey-2018-Results.html.

Georgia Scores Impressive Wins in NASCIO Awards

Georgia state agencies have earned impressive wins in recent years in the State IT Recognition Awards, which are sponsored annually by the National Association of State CIOs (NASCIO). It's arguably the most competitive and prestigious awards program in the nation that honors state agencies for their achievements in the innovative use of information technology.

For the 30th annual NASCIO awards in 2018, Georgia Gateway, the state's consolidated system for determining eligibility for an array of public-assistance programs, received a first-place award in the category of Cross-boundary Collaboration and Partnerships. Georgia Gateway is managed by the Department of Human Services (DHS) but also incorporates public-assistance programs from the departments of Community Health, Public Health, and Early Care and Learning. For more details, see Georgia Technology Innovation Showcase on page 44.

DHS also received a first-place award from NASCIO in 2017 for its Child Support Services Mobile App, which allows non-custodial parents to make child support payments on their mobile phones. In addition, technology projects from the departments of Revenue and Transportation were named finalists in the 2017 awards program.

First-place awards were presented to the Georgia Technology Authority in 2016 for its Web Accessibility Initiative and to the University System of Georgia (USG) in 2014 for its integrated learning platform. USG was named a finalist in 2013 for an online information repository, and the State Road and Tollway Authority was named a finalist in 2012 for its I-85 Express Lanes.

NASCIO is the nation's leading resource for state CIOs and a prominent advocate for technology policy at all government levels.

Calvin Rhodes Receives CIO of the Year ORBIE Award

Georgia CIO Calvin Rhodes was honored with the 2018 CIO of the Year ORBIE Award for the nonprofit/public sector. The ORBIE awards, sponsored by the Georgia CIO Leadership Association, are widely considered to be the nation's leading recognition program for technology executives.

In choosing award recipients, the association considered the size and scope of the nominees' responsibilities, their leadership and management effectiveness, the business value created by technology innovation in their organization, and their engagement in the technology field and community.

Mr. Rhodes was named Georgia CIO and Georgia Technology Authority executive director in 2011 and is currently the nation's longest-serving active state CIO. He has led the state's public/private IT transformation and consolidation initiative, which has successfully strengthened cybersecurity, modernized IT infrastructure and networks, improved the reliability of information systems, and increased transparency in the state's IT enterprise. He also has overseen construction and partner coordination for the $100 million Georgia Cyber Center in Augusta.

The Georgia CIO Leadership Association is a professional association for Georgia CIOs. It is one of 11 chapters of a national leadership association for CIOs from public and private companies, government, education, health care, and nonprofit organizations.

StateScoop Honors Georgia Technology Leaders

Georgia was well represented among the 2018 winners of the StateScoop 50 awards, which annually highlight outstanding leaders and innovations in the state IT community.

Chief Digital Officer Nikhil Deshpande was among eight people nationwide to receive the State Leadership of the Year award, while Walter Tong, Director of Cyber Intelligence, was one of seven winners in the State Cybersecurity Leader category. In addition, Georgia Gateway was among 12 projects recognized as a State IT Innovation of the Year award winner.

Mr. Deshpande leads the Georgia Technology Authority's Office of Digital Services Georgia, which manages the web-publishing platform supporting more than 80 state agency websites.

Mr. Tong works with state agencies on security program development, evaluations, and risk management.

StateScoop named GTA's Kendra Skeene to the list of Top Women in Technology for the second year in a row. Ms. Skeene, product director for Digital Services Georgia, is one of several women from state and local government and private industry who have been recognized for "their dedication, excellence, and use of technology in the course of public service."

Award recipients were selected by members of the state IT community in nationwide voting. More than 500,000 votes were cast on StateScoop's website, narrowing hundreds of readers' nominations in six categories to select the 2018 winners.

Georgia Named a Finalist in Government Experience Awards

Georgia was named a finalist in the 2018 Government Experience Awards, which recognize states, cities, and counties that "push the boundaries of how citizen services are delivered."

Like the Digital States Survey, the awards are sponsored by the Center for Digital Government. In naming Georgia a finalist, the center described Georgia's state websites as "built with a simple and clean design that allows residents to perform necessary functions with self-service capabilities, all while projecting a warm, conversational tone."

Georgia.gov Ranked as Top Performing Website

Georgia's primary state website, www.georgia.gov, was ranked as the best performing in the nation by the Information Technology and Innovation Foundation (ITIF). When taking additional state agency websites into account, Georgia ranked No. 4 in the overall state standings.

The ITIF reviewed 400 U.S. state government websites representing seven different service types to assess performance on four criteria: page-load speed (on both desktops and mobile devices), mobile friendliness, security, and accessibility.

The ITIF is an independent, nonprofit, nonpartisan research and educational institute in Washington, D.C.

Georgia ranked No. 2 overall in both page-load speed and accessibility. When evaluating specific government functions, Georgia.gov's Popular Topics webpage on driver's licenses ranked No. 2 for driver's license information, and the Popular Topics webpage on business licenses ranked No. 2 for business registration information.

Meanwhile, the Georgia Department of Revenue's website ranked No. 2 for taxes websites, the Georgia Department of Public Health's website ranked No. 3 for vital records websites, and the Georgia Department of Public Safety's website ranked No. 3 for traffic citation websites. All three of these top-performing websites are part of the state's enterprise web-publishing platform, which is managed by GTA's Office of Digital Services Georgia.

Georgia ranked No. 11 overall on mobile friendliness and No. 18 overall on security measures, even though communications between web browsers and websites on the state's enterprise platform are encrypted.

Georgia Technology Innovation Showcase Recognizes IT Achievements in State, Local Agencies

Since 2011, the Georgia Technology Authority has sponsored the Georgia Technology Innovation Showcase, which recognizes state and local agencies for the innovative use of technology in serving their constituents. The showcase also promotes the sharing of ideas, experiences, and lessons learned. In selecting projects to receive top honors, the evaluation panel focuses on the level of innovation in addressing a specific business problem and the significance of the project in improving operating efficiency, saving money, and enhancing service delivery. Awards are presented annually at the Georgia Digital Government Summit.

Over the years, several projects selected for the showcase have gone on to earn further recognition in national awards programs, most notably the State IT Recognition Awards sponsored by the National Association of State CIOs (NASCIO).

The following overviews describe the projects selected for the 2018 showcase. The first project, Georgia Gateway, also received a first-place award in 2018 from NASCIO in the category of Cross-boundary Collaboration and Partnerships.

Georgia Gateway

Department of Human Services (DHS)

Going into the second decade of the new century, the state of Georgia faced a growing list of issues relating to SUCCESS, its aging system for determining eligibility for a limited number of public assistance programs. A great deal had changed since SUCCESS was first launched in 1998, not the least of which were advances in technology. Customer expectations for higher levels of service delivery, and even an aging workforce were adding to pressures for a new, expanded, and better integrated eligibility system encompassing a greater number of public assistance programs. Budget cuts in the wake of the economic recession meant agencies had no choice but to do more through innovative technologies.

But replacing and expanding SUCCESS wouldn't be easy. The state's vision called for a single application for workers and a single web-based portal for customers to enter their information once and determine their eligibility for numerous public assistance programs administered by numerous state agencies. The state's vision called for somehow making it possible for disparate applications and databases at different agencies to "talk to each other." The solution would need to incorporate rigorous security and fraud-prevention measures.

Equally as challenging would be finding a way for business and technology leaders across state government to work together effectively on a sprawling project with enormous implications for government's ability to successfully deliver a complex project affecting hundreds of millions of taxpayers' dollars.

With Georgia Gateway, https://gateway.ga.gov, the state achieved its vision.

Georgia Gateway increased the number of assistance programs covered by the state's centralized eligibility application from three to 10, incorporating programs from the departments of Human Services, Community Health, Public Health, and Early Care and Learning. It delivered new options for customer self-service and new tools to greatly enhance worker efficiency while ensuring state compliance with federal legislative and regulatory requirements. It also established a new model for how state agencies can work together, relying on several governance boards to ensure effective project oversight and sound decision making.

Georgia Gateway is well positioned to serve Georgians and state workers for years to come while bringing more accountability and transparency in the administration of public assistance programs.

KOALA Provider Self-Service and Quality.Rated.org

Department of Early Care and Learning (DECAL)

As the state agency responsible for meeting the child care and early education needs of Georgia's children and their families, DECAL relies on an integrated suite of custom apps, known as KOALA, to manage its various operations. The most recent enhancement, KOALA Provider Self-Service, is a web-based, mobile-ready app allowing child care providers to perform many self-service functions. Online self-service options make it easier for child care providers to comply with statutory and regulatory requirements. They also automate and streamline workloads for DECAL workers.

The accompanying Quality Rated website at http://qualityrated.org immediately displays operational data that child care providers update themselves using the KOALA Provider Self-Service app. The website makes it quick and easy for parents to search for providers near them, compare service offerings from multiple providers, and access licensing information about providers.

KOALA Provider Self-Service has significantly streamlined provider interactions with DECAL. With 98 percent of providers now paying their licensing fees online or with their mobile devices, collections through the app totaled $672,000 in 2017. Providers also use the app to submit and track their Comprehensive Background Check applications and to print licensing certificates. Offering providers a self-service option for criminal background checks not only makes the process easier for them, it has helped DECAL avoid $690,000 in administrative costs.

The app keeps providers informed about the status of their interactions with DECAL in real-time through online updates and automated emails. The app generated over 325,000 emails to providers in 2017.

DECAL has been recognized by one of the nation's leading experts in early childhood development for its use of research data to inform program and

policy decisions, and DECAL relies on its suite of KOALA apps to collect and analyze data relating to child care and early education needs.

Service Review and Technical Assistance Application

Department of Behavioral Health and Developmental Disabilities (DBHDD)

DBHDD reached an agreement with the U.S. Department of Justice to no longer house individuals with intellectual and developmental disabilities (IDD) in state behavioral health hospitals.

But because individuals with IDD are typically at high risk and need intensive support, DBHDD service reviewers are required to assess them after they are placed with a community-based residential service provider. The assessments are conducted at intervals of 48 hours, on the 9th day, on the 16th day, and afterward at seven-day intervals as needed. The purpose of the assessment is to ensure the individual with IDD is in a healthy and safe environment and is receiving proper care.

One of the challenges for the service reviewer in conducting the assessment is collecting large amounts of data in an easy and purposeful way. The Service Review and Technical Assistance (SRTA) application helps service reviewers easily navigate and collect data using touchscreen technology. It was designed for service reviewers to flag health, safety, and quality of life issues requiring action by the service provider. The application also alerts the service reviewer who performs the next visit to verify the resolution of pending issues.

Before the application's development, DBHDD's service reviewers were only able to collect and store data in disparate spreadsheets. The approach caused untimely delays in analyzing how well individuals with IDD were being cared for, and service deficiencies and alerts were not easily shared with other service review teams.

In calendar year 2017, 31 service reviewers performed 3,270 visits with 449 individuals with IDD who transferred from a state behavioral health hospital to a community-based residential service provider. On each of the visits, the service reviewer assessed 200 health, wellness, and safety issues; if any issue was flagged, it was rolled up into one of eight categories. If any issue was coded as life-threatening or severe, clinical oversight managers were immediately notified.

The SRTA application strengthens the ability of DBHDD officials to get in front of potential causes or contributors to the decline in health of an individual with IDD. It enables DBHDD workers to be more proactive and to ensure higher quality of care for vulnerable Georgians.

Other states, facing the same challenges and seeking similar solutions, are turning to DBHDD to learn about the application.

CRM and Process Automation Implementation

Department of Administrative Services (DOAS)

DOAS collaborated with the State Accounting Office to implement a new Customer Relationship Management (CRM) system to update and streamline customer service request management. The new CRM system, powered by Oracle Service Cloud, is fully integrated with TeamWorks

PeopleSoft and Platform28, the state's telephone system. The integration enables the CRM system to automatically create service requests by search-matching the customer's telephone number or email address. All email threads are contained within the service requests, thereby improving service, accuracy, and speed.

Integration with PeopleSoft allows DOAS to use the CRM system as the single "source of truth" for customer data, and all five of DOAS' lines of business share the same customer information.

The CRM system includes a knowledge base that is fully integrated with DOAS' public website. As a result, website visitors who view frequently asked questions are accessing knowledge base records in the CRM. Website visitors are asked whether responses are helpful by clicking Y or N, thereby helping improve the quality of the knowledge base.

In addition, DOAS implemented Oracle Policy Automation to automate various customer online-submission processes, including statewide contract waivers, supplier performance reporting, minority business certification, and surplus eligibility. Customers were previously required to download, print, and upload forms, which were then manually routed for fulfillment. Customers now complete a guided interview on DOAS' self-service site, and the requests are immediately sent to the service provider.

Enhancements to Banner Student Information System

University System of Georgia (USG)

USG sought to address two key issues currently challenging our nation and its dominant economic and technological position in the world: the need to expand the number of students pursuing careers in science, technology, engineering, and mathematics (STEM) and the rapidly rising costs of higher education.

Graduates with STEM degrees remain in high demand. More than 60 percent of job recruiters were most interested in hiring graduates with STEM degrees in 2017 while only 23 percent of graduates earned STEM degrees (source: Internet Collaborative Information Management Systems).

Meanwhile, the cost of higher education has increased more than 538 percent since 1985. In comparison, medical costs grew by 286 percent and the consumer price index by 121 percent. That means higher education is 4.5 times more expensive than it was 30 years ago (source: Bestvalueschools.com). Over the past 35 years, college tuition at public universities has nearly quadrupled to $9,139 in 2014 dollars. If car prices had grown as quickly as tuition over the same period, the average new car would cost more than $80,000 (source: The New York Times, "The Real Reason College Tuition Costs So Much," April 4, 2015).

In response, USG implemented two enhancements to its Banner Student Information System (SIS). The first gives greater weight to approved STEM courses when determining a student's eligibility for state-sponsored scholarships, and the second makes no-cost or low-cost eTextbooks more readily available to students through the SIS.

USG officials are already seeing positive results. The Affordable Learning Georgia initiative has saved students more than $31 million in textbook costs to date, and the initiative is poised to grow in coming years. Only two years ago, the USG was ranked No. 1 in the nation by OpenStax at Rice

University, a national publisher, for saving students the most money through free eTextbooks.

USG's efforts to make higher education more accessible to more students are certainly broader than these two enhancements to its central SIS, but they demonstrate technology's critical role in achieving important goals.

Unemployment Insurance Wage File Upload

Department of Labor (DOL)

The Unemployment Insurance (UI) File Upload application allows employers to transmit quarterly tax and wage reports electronically to DOL. Employers can use output files from their existing accounting software package or third-party vendor software.

Prior to the application, employers could use one of three ways to submit their quarterly tax and wage reports. They could submit paper reports, which involves an inefficient, manual process. It's also expensive to produce paper reports, and it takes up to 10 weeks for DOL to process them. Employers could use DOL's Internet Tax and Wages application, but it's designed for small businesses with up to 25 employees. A third option, especially for large employers, is the use of magnetic media, but it involves transmitting sensitive data in a highly insecure manner. In addition, DOL's legacy system that processes magnetic media doesn't notify a business when errors are encountered with its reports, and errors such as invalid file formats or invalid characters must be resolved manually.

UI File Upload allows employers to upload their wage file in .CSV or Excel format; then they are able to submit their tax report. One hour after the wage file is uploaded, employers receive an email notifying them whether the file was accepted or rejected. If the wage file is rejected, employers are directed to log in to an online system to view the errors. After viewing the errors, employers can make the necessary corrections within the app and resubmit the file, which results in cleaner data.

Thanks to the availability of UI File Upload, DOL saw an almost 40 percent reduction in the submission of magnetic media in 2017, and the number of employers using the new app totaled 2,143 by the end of the year. During the same period, the time required to process magnetic media dropped from up to 10 weeks to as little as three weeks. DOL expects to eventually eliminate all magnetic media processing, which will allow the department to decommission servers and eliminate legacy COBOL programs that are used to process magnetic media.

OSAH Operation Paperless

Office of State Administrative Hearings (OSAH)

OSAH launched a web-based case management system (CMS) in 2017 as part of a multi-pronged effort begun in 2004 to achieve a paperless environment. Four judges agreed to pilot the new CMS and go completely paperless. The judges gave up file folders, folder labels, printing documents, and burning CDs or DVDs of hearing proceedings.

The CMS allows for documents to be generated and automatically attached to each case. Hard copies received in the mail are scanned using desktop scanners and attached to the case, and documents received electronically –

by email, fax, or Citrix ShareFile – are downloaded and attached to the case. In addition, staff use dual monitors, which allow them to work more easily and efficiently with the CMS and attached documents. Citrix ShareFile makes it easy to transfer large files, case support documents, and digital recordings.

During the pilot, OSAH saw a 43 percent reduction in the use of office supplies such as file folders, folder labels, photocopy paper, CDs, and DVDs. In addition, the judges no longer needed to carry hundreds of file folders when they traveled to various hearing locations since they could securely access case documents on the web using a VPN.

Because of the success of the pilot, OSAH planned to expand use of the CMS to all 15 judges in 2018.

Electronic Plans Submission and Review

DeKalb County

DeKalb County worked closely with citizens and community leaders to enhance the delivery of planning, permitting, and development services through an innovative technology solution that enables effective communication and collaboration between county officials and community stakeholders. The solution automates the management of:

- Land planning
- Development applications
- Entitlements
- Long-range planning
- Geographic information systems

Prior to implementing the Electronic Plans Submission and Review project, managing these operations involved many manual processes that were complex, cumbersome, and time-consuming.

The county typically accepts and reviews several hundred residential, subdivision, commercial, and special-use site development plans (SDPs) annually. Along with various forms and checklists, multiple sets of a paper plan were previously required for each submission, and each plan contained between six and 25 sheets per set, leading to hundreds of pages per submission. Furthermore, SDPs are often reviewed multiple times, sometimes with multiple resubmissions required until all county regulations are met. Manually keeping track of paper plan sets, documents, notes, and collaboration among various county departments throughout the process demanded extraordinary resource-management efforts and staff time, and it proved to be a labor-intensive process for customers.

DeKalb County's Department of Technology and Innovation worked closely with county departments and Avolve Software to implement ProjectDox, a market-leading solution for submitting and reviewing electronic plans. Deploying the solution required re-engineering many of the county's internal business processes along with innovative thinking and collaboration from all stakeholders. It allowed the county to eliminate many paper-based, manual processes and to enhance the overall interoperability of planning and development systems. The project also created a more transparent means of working with citizens and businesses.

The technology solution connects to existing, structured databases; handles unstructured data, such as plan and document files; and manages an

integrated set of complex workflow and forms-based processes. Moreover, the system is easy to use and accessible at all times to citizen stakeholders and county departments.

The online availability of digital plans eliminates the need for physical plans to be routed among various county offices. It's now common to see the time to complete the permit process reduced by 50 percent and the time needed for second reviews reduced by as much as 70 percent. As a result, the permit process can be shortened by days and even weeks. In addition to saving time, the online process is more accurate since all reviewers are now confident of looking at the same plans at the same time.

Expanding C2G Through GIS Story Mapping

Cobb County

Cobb County sought to expand its large GIS user base in 2017 by launching a new, public-facing portal that uses story maps, which make it possible for the county to share large sets of dynamic information in a visual, colorful, and easy-to-use format.

Through the new portal at https://cobbcounty.org/GIS, residents can track county projects, download data, print maps, and explore attractions in Cobb County. Story maps spotlight such topics as farmers' markets, historic driving tours, and the county's parks. One particularly successful story map involved collaboration with the Cobb County Emergency Management Agency; the story map turned out to be key to the county's efforts to reach citizens during Hurricane Irma in September 2017 and a major snow storm in December 2017.

Appendix

Appendix A – Participation by Agencies

Exhibit 1 – Agencies Reporting IT Expenditures

* = Cost data through the Georgia Enterprise Technology Services (GETS) program

NR in the "Reported 2018" 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.

	Agency Name	Reported 2016	Reported 2017	Reported 2018
1	Administrative Office of Georgia Courts	NR	NR	NR
2	Atlanta Regional Commission	NR	NR	NR
3	Board of Regents	NR	NR	*
4	Brain & Spinal Injury Trust Fund Authority	✓	✓	✓
5	Council of Criminal Court Judges	NR	NR	*
6	Council of Juvenile Court Judges	NR	NR	*
7	Community Service Boards	NR	NR	NR
8	County Health Departments	NR	NR	NR
9	Court of Appeals	NR	NR	*
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	Department 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 Insurance	✓	✓	✓
27	Department of Juvenile Justice	✓	✓	✓
28	Department of Labor	✓	✓	✓
29	Department of Law	*	*	*
30	Department of Natural Resources	✓	✓	✓
31	Department of Public Health	✓	✓	✓
32	Department of Public Safety	✓	✓	✓
33	Department of Revenue	✓	✓	✓
34	Department of Transportation	✓	✓	✓
35	Department of Veterans Services	NR	NR	✓
36	Employees' Retirement System	✓	✓	✓
37	Georgia Aviation Authority	✓	✓	✓
38	Georgia Board for Physician Workforce	NR	NR	*

	Agency Name	Reported 2016	Reported 2017	Reported 2018
39	Georgia Building Authority	✓	✓	✓
40	Georgia Bureau of Investigation	✓	✓	✓
41	Georgia Commission on Equal Opportunity	NR	NR	*
42	Georgia Commission on the Holocaust	NR	NR	NR
43	Georgia Correctional Industries	NR	NR	*
44	Georgia Council for the Arts	NR	NR	NR
45	Georgia Development Authority	NR	NR	*
46	Georgia Drugs and Narcotics Agency	NR	NR	*
47	Georgia Emergency Management Agency	✓	✓	✓
48	Georgia Environmental Finance Authority	NR	NR	✓
49	Georgia Firefighter Standards and Training Council	✓	✓	✓
50	Georgia Firefighters Pension Fund	NR	NR	✓
51	Georgia Forestry Commission	✓	✓	✓
52	Georgia Lottery Corporation	NR	NR	*
53	Georgia Peace Officer Standards & Training Council	NR	NR	*
54	Georgia Peanut Commission	NR	NR	*
55	Georgia Ports Authority	NR	NR	*
56	Georgia Professional Standards Commission	NR	NR	*
57	Georgia Public Broadcasting	✓	✓	✓
58	Georgia Public Defenders Council	NR	NR	*
59	Georgia Public Safety Training Center	✓	✓	✓
60	Georgia Public Service Commission	NR	NR	*
61	Georgia Public Telecommunications Commission	NR	NR	NR
62	Georgia Real Estate Commission & Appraisers Board	NR	NR	*
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	✓	✓	✓
68	Georgia World Congress Center Authority	✓	✓	✓
69	General Assembly	NR	NR	*
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	NR	NR	*
74	Lake Lanier Islands Development	NR	NR	NR
75	Nonpublic Postsecondary Education Commission	NR	NR	*
76	Office of Inspector General	*	*	✓
77	Office of Planning and Budget	✓	✓	✓

	Agency Name	Reported 2016	Reported 2017	Reported 2018
78	Office of State Administrative Hearings	✓	✓	✓
79	Office of State Treasurer	✓	✓	✓
80	Prosecuting Attorneys' Council	NR	NR	*
81	Secretary of State	✓	✓	✓
82	State Accounting Office	✓	✓	✓
83	State Board of Pardons and Paroles	✓	*	✓
84	State Board of Workers' Compensation	✓	✓	✓
85	State Properties Commission	✓	✓	✓
86	State Road and Tollway Authority	✓	✓	✓
87	State Soil & Water Conservation Commission	✓	✓	NR
88	Stone Mountain Memorial Association	NR	NR	*
89	Subsequent Injury Trust Fund	✓	✓	✓
90	Superior Courts of Georgia	NR	NR	*
91	Teachers' Retirement System	✓	✓	✓
92	Technical College System of Georgia	✓	✓	✓

Appendix B – Spending by Agencies

Exhibit 1 – Agency IT Expenditures

Agencies Required to Report

#	Agency Name	2018 IT Spend
1	Department of Administrative Services	$10,345,426
2	Department of Agriculture	$1,927,939
3	Department of Audits	$27,648
4	Department of Banking and Finance	$2,247,854
5	Department of Behavioral Health and Developmental Disabilities	$33,622,625
6	Department of Community Affairs	$4,130,356
7	Department of Community Health	$124,676,985
8	Department of Community Supervision	$9,130,361
9	Department of Corrections	$49,944,989
10	Department of Defense	$4,671,697
11	Department of Driver Services	$23,450,275
12	Department of Early Care and Learning	$7,194,036
13	Department of Economic Development	$724,644
14	Department of Education	$15,662,846
15	Department of Human Services	$101,938,259
16	Department of Insurance	$1,442,193
17	Department of Juvenile Justice	$17,517,126
18	Department of Labor	$18,326,938
19	Department of Law	$246,621
20	Department of Natural Resources	$14,109,884
21	Department of Public Health	$26,146,497
22	Department of Public Safety	$16,309,941
23	Department of Revenue	$46,057,494
24	Department of Transportation	$45,957,768
25	Department of Veterans Services	$284,827
26	Employees' Retirement System	$2,710,435
27	Georgia Aviation Authority	$27,376
28	Georgia Bureau of Investigation	$12,254,157
29	Georgia Forestry Commission	$2,765,019
30	Georgia Public Defenders Council	$830,043
31	Georgia Public Service Commission	$68,729
32	Georgia State Financing and Investment Commission	$1,925,447
33	Georgia Student Finance Commission	$5,340,303
34	Georgia Vocational Rehabilitation Agency	$2,153,091
35	Office of Planning and Budget	$1,249,173
36	Office of State Administrative Hearings	$510,824
37	Secretary of State	$9,271,207
38	State Accounting Office	$21,851,823
39	State Board of Pardons and Paroles	$396,534
40	State Board of Workers' Compensation	$2,988,102
41	State Properties Commission	$82,210
42	Subsequent Injury Trust Fund	$58,071
43	Teachers' Retirement System	$4,133,181
44	Technical College System of Georgia	$33,359,541

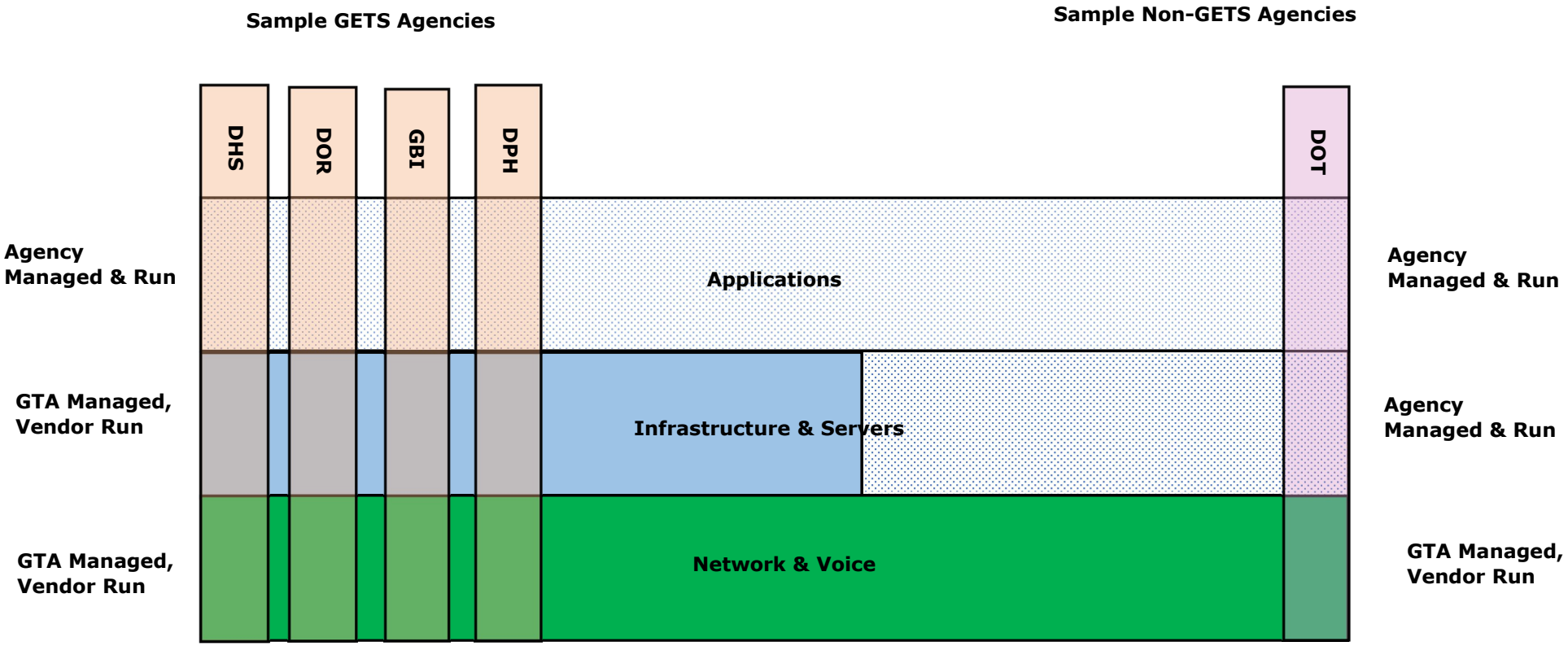
Agencies Not Required to Report

#	Agency Name	2018 IT Spend
1	Board of Regents	$4,431,500
2	Brain & Spinal Injury Trust Fund Authority	$32,433
3	Council of Juvenile Court Judges	$5,428
4	Court of Appeals	$47,832
5	Criminal Justice Coordinating Council	$636,434
6	Georgia Board for Physician Workforce	$70,766
7	Georgia Building Authority	$1,861,925
8	Georgia Commission on Equal Opportunity	$4,708
9	Georgia Correctional Industries	$34,494
10	Georgia Development Authority	$2,551
11	Georgia Drugs and Narcotics Agency	$93,190
12	Georgia Emergency Management Agency	$1,131,043
13	Georgia Environmental Finance Authority	$399,000
14	Georgia Firefighter Standards and Training Council	$106,429
15	Georgia Firefighters Pension Fund	$74,985
16	Georgia Lottery Corporation	$642
17	Georgia Peace Officer Standards & Training Council	$31,068
18	Georgia Peanut Commission	$4,146
19	Georgia Ports Authority	$282,581
20	Georgia Professional Standards Commission	$104,810
21	Georgia Public Broadcasting	$2,218,315
22	Georgia Public Safety Training Center	$1,517,116
23	Georgia Real Estate Commission & Appraisers Board	$34,816
24	Georgia Technology Authority	$30,365,038
25	Georgia World Congress Center Authority	$2,280,226
26	General Assembly	$96,074
27	Governor's Office of Highway Safety	$235,195
28	Governor's Office of Student Achievement	$2,007,520
29	Jekyll Island State Park Authority	$74,002
30	Nonpublic Postsecondary Education Commission	$9,540
31	Office of Inspector General	$56,246
32	Office of State Treasurer	$1,092,221
33	Prosecuting Attorneys' Council	$105
34	State Road and Tollway Authority	$2,748,990
35	Stone Mountain Memorial Association	$5,689
	TOTAL	$730,167,551

Appendix C – Technology Services Model

Exhibit 1 – Technology Services Model

Technology Services Model



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