

STATE OF ALABAMA

ANNUAL IT REPORT

oit.alabama.gov

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STATE OF ALABAMA Office of Information Technology

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KAY IVEY Governor

Jim Purcell
Acting Secretary

Dear Governor Ivey,

I am pleased to deliver to you the 2017 State of Alabama Annual Information Technology (IT) Report.

The year 2017 was productive and successful for the Office of Information Technology (OIT). OIT strives to provide our customers quality services, transparency of service rates and costs, improved security for our citizens' data, and lower costs.

Since my appointment as Acting Secretary of IT in July 2017, OIT has:

- Completed the transfer from Finance Information Service Division (ISD)
- Established the state's first Security Operations Center, which monitors, alerts, and reacts to agency network threats
- Created the Product Management Office, which provides cost-efficient automated solutions to state agencies
- Created Agency Advocates who serve as the OIT's point of contact for questions, comments, or complaints an agency may have
- Implemented Microsoft Project® Online, which allows OIT to approach project management from an enterprise level with universal accessibility
- Implemented the Change Management Program, which ensures changes that impact state IT services are analyzed, resourced, planned, and errorfree
- Continued the IT Reclassification Study by completing all agency PDQ reviews and classification mapping (pending presentation to the State Personnel Board)
- OIT is committed to providing state agencies IT services at a high level of excellence and upholding our mandate to provide these services safer, better, faster, and cheaper.

I appreciate your continued support of this office and our work. We remain committed to focusing on priorities that make IT for the State of Alabama more efficient, productive, and more effective. We will continue to strive to provide quality IT services to the state allowing them to serve our taxpayers as efficiently as possible.

Sincerely,

Jim Purcell

Acting Secretary of IT

EXECUTIVE SUMMARY

The Office of Information Technology (OIT) was first formed through the passage of Senate Bill 117 and was signed into law on May 21, 2013. As enacted, Act 2013-68 also established the position of Secretary of Information Technology – the first time in Alabama's history that a Cabinet-level position was created specifically for Information Technology (IT).

Calendar year 2017 was a year of progression through transition as preparations for acquiring the Information Service Division (ISD) from Finance were made. On May 16, 2017, Governor Kay Ivey signed into law Act 2017-282, requiring the Department of Finance to transfer ISD to OIT with an effective date of October 1, 2017. Consolidating the state's IT agencies enhances operational efficiency and resiliency, furthers the state's goal of service delivery transformation, and streamlines the state's decisional structure for IT.

Resource Utilization

The 2017 Annual IT Report is organized to present a statewide view of 2017 OIT activities and accomplishments, technology spending, and assets. This information represents the collective input from the Office of Information Technology, the Finance Information Services Division, and agency IT organizations.

STATEWIDE IT STRATEGIC PLAN 2017-2020

The strategic plan sets out the mission of the Office of Information Technology to make the State of Alabama Government run safer, better, faster, and cheaper. Our vision for the years 2017-2020 is to:

- Make IT a trusted partner to agencies as they serve the people of Alabama
- Reduce redundancies and application costs
- Provide a more effective environment for data-drivendecision-making
- Be more agile in responding to new technologies as they develop, while employing best practices in risk mitigation

The Secretary and OIT are responsible for developing a comprehensive four-year strategic plan for the State's Information Technology that will be updated annually and submitted to the Governor. The focus of the plan will be on acquisition, management, and use of IT by state agencies. The plan will coincide with the planning and budgeting processes for state agencies, with the purpose of helping the state to achieve its goals of reducing redundant expenditures and maximizing the return on IT investments.

The following sections address the activities undertaken and the accomplishments achieved by the Office of Information Technology during 2017.



Cybersecurity 2017 Successes

The Alabama Office of Information Technology plans to establish a Security Operations Center (SOC), giving the state its first consolidated and centralized work force for incident response, threat mitigation, and proactive security services.

Through the hard work and efforts of the SOC engineers and analysts, the state has developed processes and plans to identify, resolve, or mitigate many of the threats currently faced by Alabama's state agencies. By late 2018, the Office of Information Technology (OIT) will begin a major push to promote security awareness and strengthen employee skillsets in other IT disciplines. This effort will carry forward through 2019 and future years.

In 2017, OIT hired the current State Chief Information Security Officer (CISO), Ryan Allen, who has pushed for visibility and collaboration between OIT and the client agencies to promote the greater good of the state and its security initiatives. Under Ryan's leadership the state security stance and processes have migrated from reactionary processes, to a more proactive threat assessment and mitigation mindset.

The Office of the Chief Information Security Officer (OCISO) protects the confidentiality, integrity, and availability of the vast amounts of data maintained by state agencies to serve our citizens. The OCISO is tasked with two very different but equally important missions which are carried out by the Governance, Risk Management, and Compliance (GRC) team and the Cybersecurity Operations team. The CISO's office will continue to build collaborative relationships with all areas of the Alabama State government to ensure the most effective security posture possible.

IT Governance, Risk, And Compliance

The GRC team was quite busy in 2017 consolidating legacy Information Services Division (ISD) security policies with the new OIT polices and uploading them to the new OIT website and Governance Library. The GRC team also showed their support for the OCISO by distributing large numbers of posters and security awareness aides during the National Cybersecurity Awareness Month in October.

New Proofpoint™ Enterprise Security Gateway Implemented



Proofpoint™ Enterprise Security is well known for providing a wide range of advanced security capabilities for all major email security gateway products. The Proofpoint™ Enterprise email security product examines emails (inbound and outbound) and detects spam, malware and phishing threats. If threats are detected, Proofpoint™ blocks them from delivery.

The need to replace the McAfee Gateway arose as licenses were scheduled to expire October 31, 2017. The Office of Information Technology (OIT) management reviewed alternative solutions for email protection, and Proofpoint™ was chosen based on:

- Competitive pricing
- Inbound email scanning
- Outbound email scanning
- SPAM filtering and reporting

The OIT Systems Administration team successfully implemented the Proofpoint™ Enterprise Security Gateway, which replaced the McAfee Email Security Gateway used for OIT's email service. The cut-over took place the week of October 23, 2017.



VoIP Statewide Project Launched

Why VoIP?

The state's current voice communications systems are primarily based on 25-year-old technology. Our communication systems are costly to maintain, no longer adequately supported by vendors, and pose a risk to operations with the potential for a catastrophic failure. In addition to the operational risks, our current system is not only expensive to maintain, but the fees we currently pay to vendors for circuits and long distance are extremely expensive relative to that of a modern VoIP system.

We are pleased to announce the launch of **our statewide Voice-over IP (VoIP)** implementation project. Upon completion, the VoIP project will improve voice, video, and collaboration capabilities. **Phase I will implement VoIP for the Montgomery campus only with Phase II delivering VoIP throughout Alabama state government.** The project will consist of a network infrastructure upgrade, new VoIP phones, video, and collaboration software.

The VoIP statewide implementation project will be divided into two phases: **Phase I project** activities are already underway to upgrade the network infrastructure and lay the foundation for deploying phones to end users. The plan for the project is to start rolling out new phones by the end of this calendar year. This rollout will allow enough time to upgrade the network infrastructure and gather the information needed to complete the phone deployment. Once we begin the process of deploying phones, we anticipate an approximate 10-month rollout.

What will be the impact to my agency throughout the project?

During implementation, the OIT project team will do everything possible to ensure minimal impact or disruption of services to your agency. The Office of Information Technology will shoulder much of the workload, but we will require support from your agency IT personnel and phone coordinators. Agency required support may include providing detailed information specifying your voice requirements, existing network configuration data, and providing access to required building facilities and offices.

What improvements can we expect?

Our goal for the VoIP project is to provide a new voice, video and collaboration solution for the State of Alabama. The project will upgrade the state's core network and the network infrastructure in all buildings supported by VoIP. Once the network upgrade is complete, we will have the infrastructure in place that will support a statewide VoIP system and provide improved data services.

The VoIP project reduces the state's voice communications costs and addresses the risks associated with our aging technologies. Once both project phases are complete and project implementation costs are recovered, the state is estimated to save over \$10 million annually. In addition to cost savings, the VoIP project addresses the risks associated with unsupported technologies and security. While cost savings and risk reduction are the primary justification for this project, the State will also realize benefits from the enhanced tools and services provided by an enterprise VoIP architecture.

With this new architecture and suite of tools, the state will be able to create opportunities for improved productivity and service delivery to Alabama's citizens. A few examples of productivity improvements include:

- **Presence:** Know when a coworker is in the office (online), busy, or offline.
- **Mobility:** Transfer ongoing calls from office phone to cellphone.
- **Unified Communications:** Communicate across multiple tools. For example, deliver voicemail to email inbox.

- **Travel Cost Savings**: Travel less using improved availability of video teleconferencing and collaboration tools.
- **Contact Center Services**: Call center capability with enhanced features and improved reliability.
- Transparency: Record phone calls in State offices that provide critical state services.



OIT is incorporating new, more reliable technology, and more bandwidth to keep the State of Alabama moving efficiently toward the future. Thanks to these new circuits provided by OIT, state agencies will better accommodate current and future applications involving the cloud, the Voice Over Internet Protocol (VoIP) deployment, and ever increasing physical security needs.

This advancement comes after AT&T notified OIT that it will be discontinuing the use of the Network-based Virtual Private Network (NetVPN). This network was primarily built on frame relay technologies, which was aging out of use and has served as the backbone for much of the infrastructure of the wide area network (off campus of Montgomery, Alabama) and primary connectivity for sites around the state.

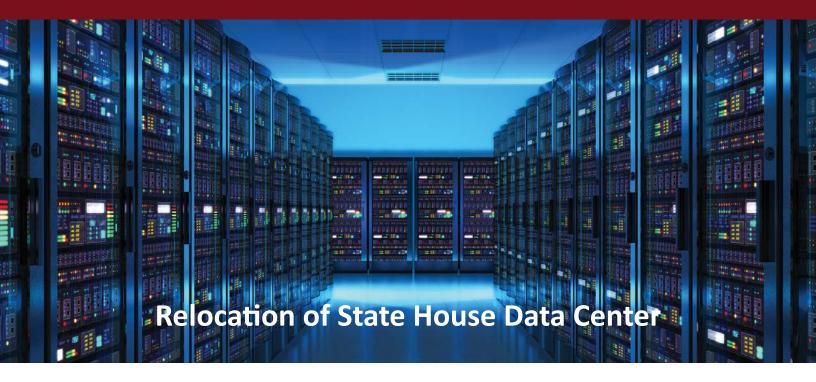
Response time during periods of need will also be dramatically reduced. OIT established bids and contracts to have managed services at various geographical sites throughout the state, requiring them to be monitored at the carrier level 24/7/365 for outages and troubles, as well as providing dispatch services in the event a circuit fails. This will reduce the response time, as well as enable the carriers to provide proactive notifications of failures and issues before they impact service. Two companies are working on this effort: AT&T, and Information Transport Solutions (ITS).

During the migration to the new infrastructure and service, NetVPN T-1, Bonded T-1, 4MB, 8MB and other Ethernet based circuits were replaced with a 10MB fiber-based service (where available) statewide. Due to the increasing cost of the aging NetVPN products, the fiber-based 10MB service was within the price range of what the newer T-1 AVPN technologies cost. Areas where the fiber-based service could not be obtained received a like-for-like circuit on newer

technology that will also be a managed type solution; however, the speeds were limited to T-1 based speeds.

The project began in the spring of 2016 with 1,548 circuits, and at the end of 2017, all but 23 of those sites had been converted or managed by other vendors. During the changeover, work came to a pause at different points, including in mid-2016 due to new security measures implemented by the Alabama Law Enforcement Agency (ALEA). Statewide elections also proved to be a challenge. With a Secretary of State (SOS) presence in each county in Alabama, project work was suspended two weeks before and after any election as a precaution to ensure there was no disruption in any election due to the lack of network connectivity.

The new technology can now be offered in more geographically diverse locations throughout the state, providing a greater uptime and more resilient network to protect from outages. This infrastructure is also supporting higher speed circuits that will in turn support the needs of higher bandwidth applications that are critical to the state's operations.



The December 2017 relocation of the State House Data Center (DC) to the Retirement Systems of Alabama (RSA) Dexter Avenue Data Center in Montgomery was a major undertaking. The Data Center move, which was primarily a consolidation of facilities, involved relocating approximately six agencies and Office of Information Technology (OIT) hardware systems. OIT also provided cage materials to provide added security where required.

In addition to moving agencies, the move included:

- Removal of cages
- Removal of fiber
- Relocation of OIT support systems infacility
- Changeover, removal or disconnection of security system.

Groups and areas included in the move were:

- Cybersecurity
- Project Management
- Systems Administration
- Network Operations
- Security Operations
- Engineering
- Installation & Maintenance (Shop)
- Infrastructure—Data Center

The benefits of the move included:

- Reduction of negative cash flow from rent, facility costs, and low fees collected from agencies
- Elimination of the cost to replace UPS and the maintenance cost of HVAC systems



New Product Management Group

The Office of Information Technology established the Office of Product Management. This new division is responsible for developing lines of business to deliver value and maximize the return on investment for technology solutions. OIT continuously strives to provide our clients with the quality services needed to run safer, faster, and more efficiently.

Directed by Mike Vanhook, the Office of Product Management (OPM):

- Listens to market needs
- Measures the success of a product line
- Delivers solutions
- Delivers what matters

OPM Service offerings

The Office of Product Management offers agencies services which fulfill client needs and business values. OPM focuses on delivering products and assistance throughout the entire product lifecycle, gathering the needed information to ensure that market expectations are met, and ensuring agencies are getting the most value for their investment. We provide consistent aid to keep the quality of service in line with needs during the continuous change of technology.

Services are provided through OIT Business Process Automation. This is a collection of software, services, and managed platforms that provide means to convert manual and paper processes to digital. What does this mean for state agencies? It decreases their dependency on paper and labor costs which, in turn, helps agencies save money and become more efficient. After this conversion, information is stored, retrievable, and extensible, and critical and sensitive information is secure. Collaboration on documents can happen anywhere and anytime. Our services also help many agencies modernize aging systems and clear out warehouses of documents and storage. They can then build services that are more resilient to technological and personnel change.

The OPM currently offers the following services:

Laserfiche® Enterprise Content Management Platform

- Subscription Licensing
- Self-Service License Management
- ECM Enterprise Hosting
 - Content Management
 - Document Capture
 - Storage and Retrieval
 - Record Retention
 - Process Automation Workflow and Forms
 - Full Developers Environment
 - Full Systems Auditing
- Advanced Document Capture
 - Machine learning and processing
- Implementation Services
- Technical Support

Microsoft Office 365® SharePoint® Online

- Content Migration Services
- Site Development and Customization
 - Collaboration and Sharing
 - SharePoint Lists
 - Document Libraries
 - Workflows
 - Customized Forms
 - Security Groups
 - Access Management
- SharePoint Communication Sites
- Office 365[®] Integration, Tools, and Apps
- Implementation Services
- Technical Support

The OIT Product Management office is always here to deliver quality services and to our client agencies.



Implementation of Project Management Software

A prime objective of the Office of Information Technology is to help state employees work more efficiently. We are continuing that effort using new software being implemented by the agency's Enterprise Project Management Office (EPMO).

Project® Online, Microsoft's project management software, provides powerful capabilities for planning, prioritizing, and managing projects and project portfolio investments from almost anywhere on almost any device. Delivered through Microsoft Office 365®, Project® Online can be used by administrators, portfolio managers and viewers, project and resource managers, as well as team leaders and members.

Project Managers can:

- Effectively plan and manage tasks with the help of new scheduling capabilities
- Keep their teams organized in one location—their project site—where they can view project summaries, documents, tasks, and calendars
- Use Active Directory (AD) synchronization in PWA (Project® Web App) to choose which AD group contains the teams that you want to assign to projects
- Easily give teams and stakeholders the right level of access through a new SharePoint integrated security model in PWA

- Evaluate ideas or measure the strategic contribution of competing requests to determine alignments and streamline projectinitiation
- Easily create workflows in Visio and SharePoint Designer to standardize project progression or rejection and improve governance and control
- Quickly promote a SharePoint task list to an enterprise project inPWA

Change Management Program Revitalized

Background

In July 2015, under the Information Services Division (ISD), the organization implemented ServiceNow® as the standard tool suite to facilitate the organization's ITSM capabilities. As part of this effort, the Change Management program was introduced.

The Change Authority Board (CAB) was at the center of this effort. The committee was originally set up to review all changes, regardless of category. Upon the merger of OIT, executive leadership determined the need to revise the change management program. The executive leadership and the OIT Change Manager outlined a set of goals which included:

- Ensure all comprehensive changes are evaluated by OIT Executive Leadership and Directors
- Promote change management policies and procedures internally and externally
- Establish standard operating procedures for routine request for change (RFC) submissions
- Streamline the change review process

In February 2017, the Secretary of IT initiated action to revitalize the change management program following best practice principles. The revitalization program was broken down into four phases.

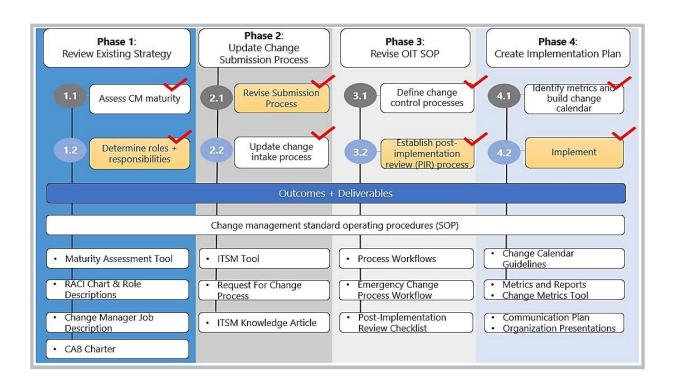
Program Revitalization

Phase 1 – Review Existing Strategy. This involved conducting a Change Management maturity assessment to determine the health of the program. The assessment revealed weaknesses in vetting changes and a lack of change management governance. These areas were improved by setting up procedures for the Change Authority Board (CAB) and preparing Standard Operating Procedures (SOPs) outlining roles and responsibilities for submitting and reviewing changes. These activities were endorsed by the Secretary of IT.

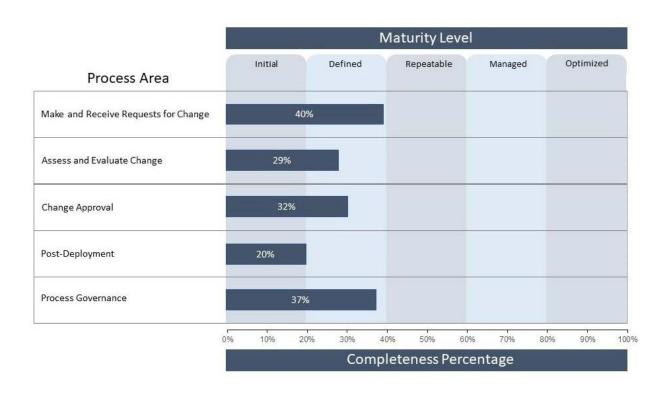
Phase 2 – Update Change Submission Process. A comprehensive review of the change submission process resulted in defining change categories and creating SOPs for changes classified as routine. As a result, updates were made to the ITSM ServiceNow® change module to align with the organizations change submission process. All routine change SOPs are part of the knowledge library and integrated with the change submission process.

Phase 3 – Revise OIT Standard Operating Procedures. The change management SOPs that were originally created under ISD were completely rewritten to align with the revised program. Each change category was updated, and flow diagrams were published to the OIT Change Management SharePoint site to illustrate the submission and approval process. The emergency change procedure was defined and integrated within the ServiceNow® ITSM application. The newly revised CAB procedure introduced a post implementation review (PIR) checklist.

Phase 4 – Create Implementation Plan. At the end of 2017 the revised change management program was fully in place following the implementation of two new operating procedures. The "OIT Procedure CM003 - Change Management" and "OIT Procedure CM004 - Change Authority Board" were formally published. A standard set of change management charts and graphs were created and published to a ServiceNow® dashboard for each executive member, director and senior manager. Using the functions and features of ServiceNow®, the metrics and reports used to present change manage data customized for the user.



The Office of Information Technology (OIT) Change Management Program provides structure to ensure services provided to State government are reliable, efficient, and secure. The change review and approval process is a vital component to ensure changes that impact information technology (IT) services to the State of Alabama are analyzed, resourced, planned and error free. The OIT Change Management Program is an integrated component of OIT's IT Service Management (ITSM) strategy. The program provides risk reduction, economic planning, structured implementation, and stable operation of IT services.



Accountability

OIT is responsible for providing information technology infrastructure and services to state agencies. Agencies are our customers and partners. State agencies contact OIT when something stops working as designed, or they want to enhance an existing application, website, add functions, or implement new IT services. OIT has expanded on the existing customer services concept by creating agency advocates.



OIT Agency Advocates serve as liaisons between the customer agencies and OIT technical experts or our vendors. Agency Advocates help guide solutions, resolve technical issues, and facilitate service delivery in a timely manner. They are the points of contact for any questions, comments, or compliants agencies may have.

OIT established the Helpdesk as the central point of contact for problems (Incidents) or new IT services/functions (Requests). All incidents and requests are entered into ServiceNow®. ServiceNow® is used internally by OIT to track incidents and requests. Requests may be simple or complex, and cover a variety of mundane or complex technical issues.

ServiceNow® tracks an incident or request and all associated tasks and provides an online status of the incident or request. ServiceNow® records the date the incident was reported and the date of resolution. Incidents are associated with categories or types of problems. OIT managers can create customized dashboards to manage problem resolution and service provision in ServiceNow®.

OIT also implemented the Customer Portal ®, which allows agencies to create and check the status of their own incidents and requests online. The ServiceNow® Customer Portal was implemented on a schedule basis beginning in August 2017 with more agencies given access until all customer agencies had online access.

Major incidents and requests are routed to the appropriate section for resolution and response. One reported incident or request may generate multiple tasks depending on the complexity of

the problem, and different sections or groups may need to work together to resolve the problem or implement a request.

The helpdesk may resolve simple incidents such as password resets or direct the agency to appropriate knowledge bases - **how to** resolve simple common issues. Helpdesk resolved incidents are logged into ServiceNow[®].

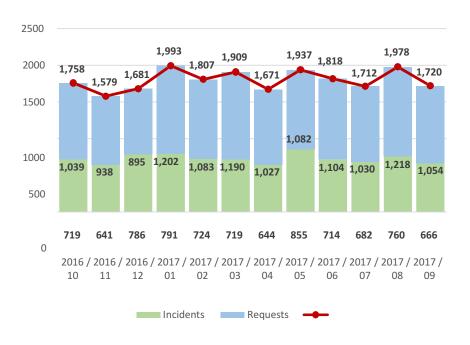
The Network Operations Center (NOC) monitors the state networks and tracks network outages in ServiceNow® as they seek resolutions. When warranted, they notify impacted agencies using Everbridge® Mass Notification.

OIT implemented Everbridge® to notify customers or partner agencies and their staff of scheduled maintenance, informational notices, and unscheduled problems or other time-sensitive communications. Internally Everbridge® is used to alert OIT support staff in resolving critical and high-priority incidents. Everbridge® provides communication via email, voice, SMS/text messages, and push notifications.

Over 130 agencies reported over 8,700 problems or incidents in 2017. On average, 725 problems or incidents and over 1,000 requests were added to ServiceNow® each month. Over 150 agencies made over 12,800 service requests during 2017.

Total Monthly Incidents (Problems) and Requests in 2017

By Month Received



Agency Helpdesk Requests

Agency requests are also tracked in ServiceNow®. The top requesting agency is OIT because ServiceNow® is used to track internal requests and enhancements.

2018 Requests Resolution Timeframe by Category

	Total	9	% Requests Resolved Within				
Agency	Total Requests	Same Day	One Week	30 Days	Cumulative Total		
Office of Information Technology	3,629	14%	51%	27%	92%		
Revenue	938	19%	53%	23%	95%		
Medicaid Agency	674	13%	57%	23%	93%		
Human Resources	635	21%	48%	21%	91%		
Mental Health	347	7%	62%	21%	90%		
Conservation	316	31%	46%	17%	94%		
Labor	309	24%	51%	19%	94%		
Law Enforcement Agency	308	6%	47%	37%	90%		
Corrections	295	7%	67%	20%	95%		
Secretary of State	275	7%	53%	39%	98%		
All Other	5,136	13%	58%	22%	93%		
Total	12,862	14%	55%	24%	93%		

Requests may be simple or complex and cover a variety of mundane and technical issues.

2017 Requests Resolution Timeframe by Assignment Group

	Total		% Requests Resolved Within				
Assignment Group	Requests	Same Day	One Week	30 days	Cumulative Total		
Voice Services	1,917	7%	50%	35%	92%		
ServiceDesk	1,616	20%	61%	15%	97%		
Physical Security	1,455	24%	51%	23%	98%		
Systems Administration	1,237	18%	51%	22%	91%		
Application Development	1,162	7%	65%	24%	96%		
Systems Applications	993	21%	64%	14%	99%		
Mainframe	773	18%	69%	11%	97%		
Web Applications	588	9%	81%	9%	99%		
Desktop Support	539	12%	49%	32%	93%		
Engineering	424	4%	27%	34%	66%		
All Other Requests	2158	11%	45%	31%	86%		
Total	12,862	14%	55%	24%	93%		

Current State of IT Spending, Assets, and Staffing

The following section is an analysis of the state's information technology (IT) assets including IT expenditures, hardware, software, and staffing for the 2017 Budget Fiscal Year. As of the date of this Annual Report, the financial figures used have not been audited by the State Comptroller.

FY2017 Total State and IT Budgets for Selected states

Government Technology's June 2017 publication, "Which States Spend the Most on Tech?" estimated each state's total budget and their total IT budget. The IT percentage of each state's total estimated budget was also calculated. On average states budget 2.50% of their total budget for IT related costs. The estimated IT percentage of each state's total budget ranged from 1.17% to 3.75%.

Alabama had the second lowest IT percentage of total budget at 1.41%. Iowa had the smallest IT spending percentage at 1.17%. The table below shows the estimated percentage of state IT budgets for selected states in this region, or states with a similar population.

Estimated Total State Budget and IT Budget for Selected States (In Millions \$)

Rank Based on IT %	State	Estimated Population	Total Estimated State Budget	Total Estimated IT Budget	IT Percentage of Total Budget
17	Texas	26,059,203	\$103,050	\$2,802	2.72%
20	North Carolina	9,752,073	\$51,777	\$1,363	2.63%
22	Florida	19,317,568	\$79,252	\$2,066	2.61%
24	South Carolina	4,723,723	\$25,543	\$652	2.55%
26	Colorado	5,187,582	\$27,172	\$685	2.52%
28	Minnesota	5,379,139	\$39,190	\$966	2.47%
30	Tennessee	6,456,243	\$34,784	\$799	2.30%
37	Arkansas	2,949,131	\$28,738	\$613	2.13%
43	Georgia	9,919,945	\$47,514	\$959	2.02%
44	Kentucky	4,380,415	\$33,762	\$630	1.87%
45	Mississippi	2,984,326	\$20,905	\$382	1.83%
47	Louisiana	4,601,893	\$31,202	\$473	1.52%
49	<mark>Alabama</mark>	<mark>4,822,023</mark>	\$30,175	<mark>\$427</mark>	<mark>1.41%</mark>
50	Iowa	3,074,186	\$18,292	\$214	1.17%

States Spending the Most on Technology

Source: Government Technology, "Which States Spend the Most on Tech?"

FY2017 Estimated IT Alabama Expenditures

The preceding table focused on estimated total state budget and IT budgets for select states. The information in this section is based on estimated IT expenditures for Alabama.

Summary

Total state spending for FY2017 was \$30.1 billion dollars. Of that amount, \$377 million is categorized as information technology (IT) spending, which equates to less than 1.3% of the total state's expenditures.

The table below shows the state spent an average below 1.2% of annual expenditures on information technology between FY2012 and FY2017, with a six year high of 1.26% in FY2016.

State of Alabama Expenditures by Budget Fiscal Year (In Millions \$)

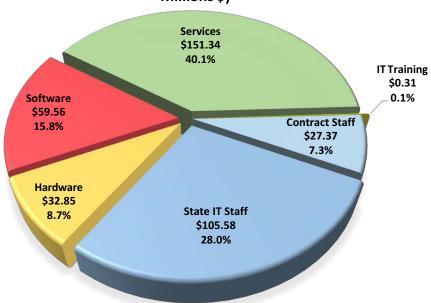
BFY	Total State Spend	IT Spend	IT %
2012	\$27,860	\$287	1.03%
2013	\$27,925	\$301	1.08%
2014	\$29,736	\$348	1.17%
2015	\$29,662	\$372	1.25%
2016	\$29,831	\$376	1.26%
2017	\$30,108	\$377	1.25%
Average			1.17%

State agencies spent over \$377 million for information technology in FY2017. The pie chart below illustrates the major IT spend by categories for FY2017. Forty percent of the state IT spending was dedicated to professional services (\$151 M), while approximately 35% (\$133 M) was dedicated to IT staffing.

Enterprise costs for temporary IT staff were included in *Services* in previous annual reports. This year, the cost of enterprise IT staff contracts are reported separately.

Note: Agencies use enterprise contracts to hire temporary IT staff or hire IT staff to augment their IT staff. Agencies may also have other contracts or agreements they use to hire professional IT staff. Various agencies used state universities to provide almost \$11.0 Million in IT services included in **Services** shown below. Contract staff costs shown is based on the enterprise contracts available to all state agencies.

FY2017 Estimated Cost of Information Technology by Category (In Millions \$)



Agencies with Highest IT Spending

The 10 agencies with the highest IT spending account for 73% of the total IT spend for FY2017. The table below shows expenditures by category and agency.

The Office of Information Technology functions were expanded when the Department of Finance's Information Services Division staff and assets were transferred to the Office of Information Technology. The Finance Department retained the State Business Systems Division. This change is reflected in the table below and throughout the annual report.

Top Ten Agency FY2017 IT Expenditures by Category (In \$ Millions)

Agency	Hard ware	Soft ware	Services	Contract Staff	State IT Staff	IT Training	Total
The Office of Information Technology	\$2.06	\$7.66	\$19.68	\$9.95	\$10.63	\$0.00	\$49.98
2. Transportation	\$8.98	\$9.30	\$14.68	-	\$15.03	\$0.16	\$48.14
3. Human Resources	\$3.46	\$2.36	\$17.15	\$0.30	\$9.44	\$0.00	\$32.70
4. Medicaid Agency	\$0.51	\$1.40	\$12.22	\$8.47	\$4.11	\$0.00	\$26.71
5. Public Health	\$2.61	\$3.56	\$6.70	\$2.82	\$9.86	\$0.00	\$25.56
6. Revenue	\$1.80	\$1.47	\$10.03	\$0.17	\$7.12	\$0.05	\$20.64
7. Retirement Systems	\$1.05	\$12.97	\$1.30	-	\$4.75	\$0.01	\$20.09
8. State Law Enforcement	\$0.98	\$1.92	\$11.49	\$0.46	\$3.96	\$0.00	\$18.80
9. Education	\$0.68	\$7.35	\$6.11	\$0.08	\$2.47	\$0.00	\$16.68
10. Finance	\$0.14	\$0.37	\$11.58	\$1.86	\$2.37	\$0.01	\$16.34
All Other Agencies	\$10.60	\$11.18	\$41.55	\$2.12	\$35.85	\$0.08	\$101.38
State Totals	\$32.85	\$59.56	\$152.49	\$26.22	\$105.58	\$0.31	\$377.01

IT Assets

IT assets, as discussed in this section, are the hardware, software and IT staff used to provide and manage IT infrastructure and resources to support the business processes of the state.

Hardware

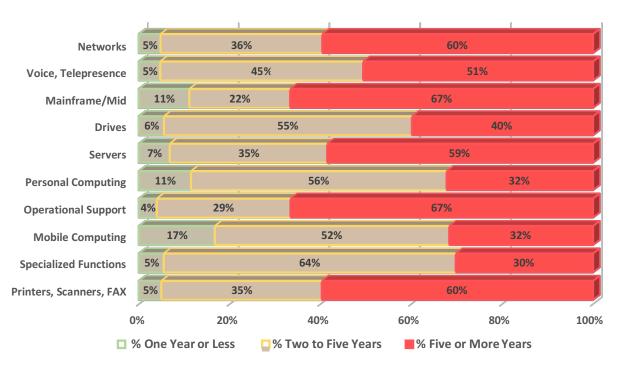
State agencies own over 85,000 types of IT related hardware or devices. Approximately 40% are five or more years old. However, a substantial number may be out of service and waiting to be processed prior to sending to salvage. OIT is working to verify all hardware and devices and to establish an ongoing process to monitor and track current IT hardware connected to the state network.

Total IT Hardware by Category and Age

	Total	Age of Hardware in Years				
Hardware Category	Devices	One Year or Less	Two to Five Years	Five or More		
Printers, Scanners, FAX	8,266	408	2,922	4,936		
Specialized Functions	2,341	128	1,506	707		
Mobile Computing	1,065	178	550	337		
Operational Support	2,003	79	590	1,334		
Personal Computing	56,979	6,542	32,081	18,356		
Servers	2,946	200	1,022	1,724		
Drives	1,779	98	972	709		
Mainframe/Mid	9	1	2	6		
Voice, Telepresence	1,830	86	818	926		
Networks	7,784	370	2,775	4,639		
Total	85,002	8,090	43,238	33,674		

Older devices may have a higher risk of equipment failure or may no longer be supported by the manufacturer. Using devices that have reached their stated end of life is a potential security risk that could put sensitive data at risk of being exposed or compromised. Device failure could also negatively impact an agency's business processes and the customers they serve.

Percentage of IT Hardware by Age Category



Software

State agencies spent \$59.56 million on software in FY2017. Software expenditures account for approximately 16% of the total IT costs. Software costs include software acquired by purchase, license, lease, rental, maintenance agreement or other means. Software includes software (programs) or firmware installed on computers, telecommunication/network equipment, cellular and satellite phones, and websites.

Software Costs by Classification (In \$ Millions)

Software Classification	Total Costs
Non-Capitalized Software cost less than \$1 Million	\$43.99
In Progress – internally generated intangible software.	\$10.70
Capitalized Software costs \$1 Million or more	\$4.87
Total	\$59.56

From an accounting perspective, software is classified into three categories based on status and cost. Software costing less than \$1 Million is considered **non-capitalized software**. The software of an ongoing project to develop an internally generated intangible software asset is considered **in progress**. Software systems costing \$1 Million or more are considered **capitalized software**.

Top 10 Agencies Software Costs by Classification (In \$ Millions)

Agency	Non- Capitalized	In Progress	Capitalized	Total Costs
Retirement Systems	\$2.31	\$10.66	ı	\$12.97
Transportation	\$9.30	-	-	\$9.30
Office of Information Tech	\$7.66	-	-	\$7.66
Education	\$3.21	-	\$4.14	\$7.35
Public Health	\$3.56	-	-	\$3.56
Human Resources	\$2.36	-	-	\$2.36
Administrative Office of Court	\$1.96	-	-	\$1.96
State Law Enforcement	\$1.92	-	-	\$1.92
Environmental Management	\$1.55	=	-	\$1.55
Revenue	\$1.47	-	-	\$1.47
All Other Agencies	\$8.69	\$0.04	\$0.72	\$9.45
Total	\$43.99	\$10.70	\$4.87	\$59.56

OIT offers a Microsoft® Office Web Application suite that integrates Microsoft Office 365® cloud-based services with real-time communication services such as instant messaging (chat), presence information, video conferencing, desktop sharing, and data sharing (including web connected electronic interactive whiteboards). There are two options. The P2 plan provides email, calendars and some other features. The G3 plan includes everything in the P2 Plan, and Microsoft® Office, SharePoint®, Skype, and other features. OIT provides these services to state agencies and other authorized entities. Generally, there is one e-mail box associated with each license. A small number of other agencies have their own instance of the Office Web Apps.

Important: Some agencies may have more licenses than employees. The excess licenses could be used by contract employees, volunteers, interns, seasonal employees or due to collaborative efforts with other entities. Agencies should monitor their software utilization until an automated process can be implemented.

IT Staffing Costs by Employment Source

The number of IT staff varies by source of employment from agency to agency. The following table shows the number of state IT staff and enterprise contract IT staff by agency as of September 2017.

Some agencies used enterprise contracts to hire temporary IT staff or augment their IT staff. Agencies have other contracts or agreements they can also use to hire professional staff. Agency-developed IT staffing contracts or university contracts are counted under *Services* and are not included in the table below. Contract staffing and costs only include the enterprise IT staff contracts available to all state agencies.

The need for specialized skills or temporary IT staff may vary from agency to agency depending on agency IT projects, infrastructure, business systems supported and other staffing needs.

Top Ten Agencies IT Staffing and Projected Annual Costs by Employment Source
September 2017

	_	oy Employmen ptember 2017	t Source	Em	Projected Annual Costs by Employment Source (In \$ Millions)			
Agency	State IT Employee	Enterprise Contract IT	Total IT Staff	State IT Employee	Enterprise Contract IT	Total IT Staff		
Transportation	165	-	165	\$15.00	-	\$15.00		
Office of Information								
Technology	99	32	131	\$10.45	\$4.26	\$14.71		
Public Health	99	26	125	\$9.84	\$3.38	\$13.22		
Medicaid Agency	38	68	106	\$3.86	\$9.56	\$13.42		
Human Resources	93	5	98	\$9.51	\$0.62	\$10.12		
Revenue	78	2	80	\$6.83	\$0.27	\$7.10		
State Law Enforcement	51	7	58	\$4.10	\$0.93	\$5.03		
Labor	49	1	50	\$4.20	\$0.16	\$4.36		
Retirement Systems	43	-	43	\$4.96	-	\$4.96		
Corrections	34	8	42	\$3.19	\$0.91	\$4.10		
All Other Agencies	317	24	341	\$29.80	\$3.15	\$32.95		
State	1066	173	1239	\$101.74	\$23.23	\$124.97		

Not only does the cost of IT staffing vary by employment source, but the number of IT employees varies by employment source. Cost to the agency is one of several factors influencing the decision to hire merit or contract staff. The availability of qualified applicants on the state personnel merit system registers is also a factor. The need for IT staff may be restricted to certain skills, projects, or timeframes. Contract staff may be more appropriate in these and other circumstances.

Note: The majority of enterprise contract IT staff is used for classifications generally not available in the merit system.

Enterprise Contract IT Staffing

As of September 2017, there were 173 IT contract staff hired under the enterprise staffing contact for managed services. The need for IT staff may be restricted to certain skills, projects, or timeframes. Contract staff may be more appropriate in these and other circumstances.

There are 16 job families or categories of IT contractor skills. Each job family includes different job titles and levels of experience. Contract IT staff were hired for the following job titles to provide IT services using the statewide enterprise contract as of September 2017.

Enterprise Managed Services Contracts Job Titles with Three or More IT Staff September 2017

Job Title	Total Positions	Average Hourly Bill Rate	Minimum Rate	Maximum Rate
Applications Development Analyst Intermediate	24	\$80.94	\$65.00	\$92.00
Web Applications Programmer Intermediate	17	\$82.12	\$68.00	\$88.01
Business Analyst Intermediate	15	\$67.07	\$49.25	\$79.88
Systems Analyst	9	\$80.98	\$38.00	\$105.00
Quality Assurance Analyst Intermediate	7	\$71.65	\$65.00	\$88.01
Systems Analyst Intermediate	6	\$76.14	\$65.81	\$85.00
Project Leader Intermediate	5	\$91.54	\$85.00	\$105.00
Project Manager	4	\$89.13	\$85.00	\$100.00
Customer Support Analyst Entry	3	\$36.00	\$36.00	\$36.00
Network Technician Entry	3	\$42.31	\$40.00	\$45.00
Computer Operator Intermediate	3	\$48.33	\$45.00	\$50.00
Project Management Specialist	3	\$56.50	\$45.00	\$65.00
Applications Development Analyst Entry	3	\$62.67	\$55.00	\$68.00
Network Technician Intermediate	3	\$65.00	\$65.00	\$65.00
Web Applications Programmer	3	\$66.71	\$66.16	\$67.00
Decision Support Specialist	3	\$70.24	\$59.50	\$76.21
Data Base Administrator Intermediate	3	\$88.33	\$85.00	\$95.00
Business Analyst Advanced	3	\$89.33	\$84.00	\$94.00
Systems Administrator Advanced	3	\$98.16	\$84.48	\$105.00
Project Leader Advanced	3	\$129.20	\$105.00	\$177.60
Enterprise Architect	3	\$155.89	\$105.00	\$221.88
All Other Job Titles	47			
Total	173			

Agencies used IT contract staff to meet a variety of professional IT staffing needs. Within each job family there are numerous job titles with different levels of experience and skillsets. While some positions have the same job identification number, the difference in the job titles shows the increasing levels of experience or skillsets. The State pays overtime for contract staff, but at the standard hourly rate.

State IT Staffing

The selected IT class titles listed in the table below represent 84% of the current IT State staff classifications. The hourly cost is the cost to the agency. There are other factors that may impact the agency cost. These factors may include the cost for computers, software, and installation. The State does not pay contract staff for State holidays. The hourly state cost would increase by approximately 11% for a merit employee factoring in annual leave, sick leave, and paid holidays. The state does not generally pay overtime pay to state IT staff.

Changes in State IT Workforce by Classification During 2017

Classification	2016 Total As of 9/30/2016	Left IT/ Separated	Added/ New Hires	2017 Total As of 9/30/2017	% Change
Business Technology Spec	4			4	
Data Entry Operator	17	1		16	-5.9%
Data Processing Spec I(T)	3			3	
GIS Manager	3			3	
GIS Specialist	12	2		10	-16.7%
GIS Specialist, Senior	12	1		11	-8.3%
IT Functional Systems Analyst	6		1	7	16.7%
IT Manager I	36	2		34	-5.6%
IT Manager II	29	2	1	28	-3.4%
IT Manager III	5			5	
IT Operations Manager	3			3	
IT Operations Specialist	26	3		23	-11.5%
IT Operations Supervisor	10			10	
IT Operations Technician	20	2	4	22	10.0%
IT Project Manager	12			12	
IT Systems Spec, Assoc.	147	4	7	150	2.0%
IT Systems Specialist	140	4	7	143	2.1%
IT Systems Specialist, Sr	65	5	3	63	-3.1%
IT Systems Technician	48	3	18	63	31.3%
IT Systems Technician, Sr	103	5	5	103	
Programmer	20	2	3	21	5.0%
Programmer Analyst	150	7	3	146	-2.7%
Programmer Analyst, Assoc.	70	5	4	69	-1.4%
Programmer Analyst, Sr	72	3		69	-4.2%
RSA Senior IT Manager	4			4	
Security A & E Analyst			3	3	N/A
Sr Info Sys Administrator	3	1		2	-33.3%
Sr Software Developer	6		1	7	16.7%
Sys Support Analyst	3	1	1	3	
Technology Operations Spec	3	1	1	3	
All Other Classes	42	10	5	37	-11.9%
Total	1074	64	67	1077	0.3%

Note: Many enterprise job titles do not conform to current IT job classifications. It is difficult to compare hourly costs of contract IT employees to the estimated hourly cost of state IT employees based on job titles. There are different levels of experience, skillsets, and tasks.

State Employee IT Staffing

Agencies incur loss of IT productivity when State IT staff leave. IT employees leave for a variety of reasons including retirement, opportunity for advancement, and higher pay. New IT employees require time to learn an agency's business processes and applications. In FY2017, 64 employees left an IT merit classification and 67 new IT employees were hired.

Changes in State IT Merit Workforce During 2017

Workforce Activity - Adds and Separations	Total
Total IT Merit Staff As of 9/30/2016	1074
Left IT/ Separated – Not an IT Employee in 2017. No longer employed in the IT classification.	64
Added / New Hires – New IT Employees hired during 2017	67
Total IT Merit Staff As of 9/30/2017	1077
% Change 9/30/2016 thru 9/30/2017	0.3%

Information Technology is constantly changing and new advancement in technology often requires different levels of education, experience and skills. As a result, current employees may need specialized training to meet the IT needs. The table shows the changes in IT classifications that occurred during FY2017.

There were 1,010 State IT staff who appeared to be working continuously throughout the year in an IT classification in September 2016 and September 2017. Of the continuous employees, 237 (23.5%) of the IT staff did not receive a promotion, or merit raise. Many of the IT merit employees were not eligible for merit increases because they had reached the maximum compensation allowed under the state's current IT job classification.

Career paths and promotional opportunities are important to the employee and state agencies. Promoting internally allows agencies to retain IT staff when workload or advancement opportunities arise. Position classifications can be upgraded, or an agency may have a vacancy needing to be filled.

Depending on the IT needs of the agency, and the knowledge, skills and experience of IT staff, agencies can either promote existing qualified staff on the register, or hire new IT staff. Agencies hired 67 new IT employees in FY2017. Many of these new hires were not for entry level IT positions.

Agencies promoted 75 (8%) of their IT staff during FY2017. Ten (1.1%) current IT staff either accepted a promotion in another agency or transferred to another agency to receive a promotion during FY2017.

State IT Merit Employee Activity During FY2017

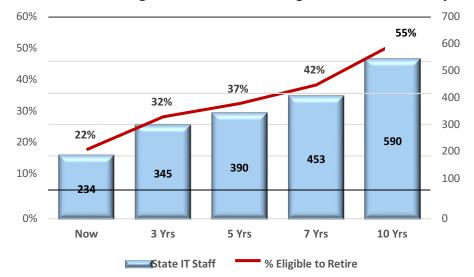
Employee Activity for Continuous IT Staff	Total	Percent	Same Agency	Different Agency
Promotions	85	8.4%	75	10
Merit Raises	688	68.1%	685	3
No Raises	237	23.5%	236	1
Total Continuous Merit IT Staff 2016-2017	1010	100.0%	996	14

State employees were eligible for annual merit increases in FY2017 based on their performance. Sometimes employees request to transfer to another agency in the same classification for various reasons. Four IT employees transferred laterally to another agency during FY2017.

Succession Planning

Succession planning as the workforce ages and approaches retirement is a serious issue for the State. Twenty-two percent (22%) of the current State IT workforce is currently eligible for retirement. These employees are eligible for retirement based on the combination of age and years of State service. In three years, almost a third of the IT workforce will be eligible for retirement.





Note: Retiring employees are generally those with more experience and have a wealth of institutional knowledge.

A retiring IT worker may support an agency's network, databases, or applications and impact a significant number of agency business processes and the customers served. The agency needs to have succession or contingency planning to maintain agency operations and services.

Potential Retirement by Classification by Year

Classification Title	Total IT	Cumulative Retirement Eligibility				ity
Classification Title	Employees	Now	3 Yrs	5 Yrs	7 Yrs	10 Yrs
Business Technology Spec	4	0	0	0	0	0
Data Entry Operator	16	7	11	11	11	13
Data Processing Spec I(T)	3	3	3	3	3	3
GIS Manager	3	1	1	1	1	1
GIS Specialist	10	0	0	0	0	0
GIS Specialist, Senior	11	1	1	1	1	2
IT Functional Systems Analyst	7	0	1	1	3	3
IT Manager I	34	14	15	16	18	24
IT Manager II	27	13	17	19	22	24
IT Manager III	5	3	3	3	4	5
IT Operations Manager	3	2	3	3	3	3
IT Operations Specialist	23	9	12	13	14	16
IT Operations Supervisor	10	4	7	8	8	9
IT Operations Technician	22	7	9	9	11	13
IT Project Manager	12	3	4	4	5	8
IT Systems Spec, Assoc.	148	32	43	55	61	80
IT Systems Specialist	139	31	50	53	61	82
IT Systems Specialist, Sr	60	22	30	31	34	46
IT Systems Technician	63	8	10	12	13	17
IT Systems Technician, Sr	103	16	29	35	41	52
Programmer	21	0	2	2	2	4
Programmer Analyst	145	26	43	48	64	87
Programmer Analyst, Assoc.	69	4	9	11	15	22
Programmer Analyst, Sr	69	16	21	26	32	46
RSA Senior IT Manager	4	1	2	3	3	3
Security A & E Analyst	3	1	1	1	1	1
Sr Software Developer	7	1	3	3	3	3
Sys Support Analyst	3	0	0	0	0	0
Technology Operations Spec.	3	0	0	0	0	0
All Other IT Classifications	39	9	15	18	19	23
Total State IT Employees	1066	234	345	390	453	590

As of close of FY2017, 22% of the State's IT staff is currently eligible for retirement. Being eligible to retire does not mean an employee will retire. According to State Personnel's Annual Report for 2016, approximately 4.5% of the state employees left state employment due to retirement. The percentage of state IT staff eligible for retirement ranges from a low of 14-16% for the Department of Transportation, Retirement Systems, and the Department of Corrections to over 30% for the Office of Information Technology and the Department of Labor.

Cumulative State IT Staff Retirement Eligibility by Agency

	Merit IT	Cumulative Retirement Eligibility				
Agency	Employees	Now	3 Yrs	5 Yrs	7 Yrs	10 Yrs
Transportation	165	27	54	63	73	93
Office of Information Tech	99	36	47	49	53	68
Public Health	99	24	32	37	47	61
Human Resources	93	22	31	34	43	56
Revenue	78	20	33	35	37	43
State Law Enforcement	51	8	11	12	13	19
Labor	49	16	23	23	27	31
Retirement Systems	43	6	10	14	14	16
Medicaid Agency	38	10	13	15	18	22
Corrections	34	5	8	9	12	16
All Other Agencies	317	60	83	99	116	165
Total State IT Staff	1066	234	345	390	453	590

Turnover Rate

State employees leave state employment for a variety of reasons:

- Some employees leave state positions for private sector jobs
- Some employees fail the state employee probation phase
- Some employees are terminated
- Some employees retire.

The turnover rate for all state employees annually averages 12% for each of last five years (2012 -2016) according to State Personnel's Annual Report 2016.

Information Technology will continue to evolve, requiring IT manpower to have new skills and knowledge to take advantage of changing information technology. Agencies need a pool of qualified IT applicants to provide the IT manpower and a modernized classification structure to attract those applicants.

Conclusion Summary

In conclusion, the Office of Information Technology has accomplished many endeavors over the last year displaying tremendous work ethic, innovative thinking, and determination. OIT will stand by our values in the coming year to fulfill our mission to make the State of Alabama Government run Safer, Better, Faster, and Cheaper.



Our Values

- To make IT a trusted partner to agencies as they serve the people of Alabama.
- To reduce redundancies and application costs.
- Provide a more effective environment for data-driven decision-making.
- Be more agile in responding to new technologies as they develop, while employing best practices in risk mitigation.

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