ANNUAL REPORT

North Carolina Department of Information Technology   FY 2020

Thomas I. Parrish, IV.
Acting Secretary and
State Chief Information Officer

The N.C. Department of Information Technology is tasked with providing the state of North Carolina with the information technology tools and services it needs to provide its residents with the governmental services they need to live happy, healthy and prosperous lives.

We created this annual report for FY 2020 to share our successes and our challenges as we worked to create a culture of innovation and collaboration. One thing is certain: this past year challenged us to be even more innovative and more collaborative as we navigated a "new normal." This report includes who we are, what we do, our response to COVID-19 and the progress we made in executing on our strategic plan and five priority areas: cybersecurity; broadband; state and local government collaboration; workforce development, recruitment and retention; and digital transformation.

The department experienced a great deal of change in FY 2020. We had changes in leadership, changes to where and how we work, and changes to how we interact with each other, our local, state and federal partners, and the public. However, what did not change was our dedication to our work and serving the people of the great state of North Carolina.

I hope you'll take the time to read our annual report and learn more about NCDIT and our talented employees who received both state and national recognition for innovation and leadership.

I look forward to seeing what we can accomplish together in FY 2021, as we build on this momentum.

About NCDIT

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The N.C. Department of Information Technology oversees and provides IT services to state agencies, local governments and educational institutions across North Carolina.

The department was established as a cabinet-level agency in 2015 to consolidate enterprise information technology functions within the executive branch. A full list of the powers and duties of the department can be found in General Statute Chapter 143B, Article 15.

The department is dedicated to transforming our shared IT services by adopting modern technology solutions and improving communications and collaboration platforms to meet our customers' needs while effectively managing risks and security.

Broadband Infrastructure Office

The Broadband Infrastructure Office serves as a statewide resource for broadband expansion, first-responder communications and classroom connectivity initiatives led by the state of North Carolina.

The office administers the Growing Rural Economies with Access to Technology (GREAT) rural broadband grant program, facilitates partnerships with broadband providers, gathers data to identify unserved areas and provides policy and technical guidance to local and state leaders looking to enhance high-speed internet connectivity and use in their communities.

Offices and Primary Functions

As NCDIT has executed on the consolidation of state IT functions, the agency has grown in both size and responsibilities.

Here is a list of NCDIT's major functions and offices.

Broadband Infrastructure Office

Engineering and Cloud Services

Enterprise Security and Risk Management Office

Enterprise Strategy

Government Data Analytics Center

Optimized Agencies

Service Delivery

Solutions Delivery

Statewide IT Procurement

Engineering and Cloud Services

Engineering and Cloud Services is charged with bringing in all new IT services and/or major updates/expansion to enterprise services provided to NCDIT and state agencies.

It is also responsible for centralizing services, as necessary, for ease of use and security (e.g., multiple cloud vendor capability from NCDIT).

The team works with vendors and agencies to conduct short-term, proof-of-concept efforts to determine feasibility, cost and practicality of different vendor solutions as needs or new technologies arise.

These efforts include uncovering any necessary training requirements, cost and projecting rate models (based on anticipated consumption).

Enterprise Security and Risk Management Office

The Enterprise Security and Risk Management Office (ESRMO) provides leadership in the development, delivery and maintenance of a whole-of-state cybersecurity program that safeguards North Carolina's information and supporting infrastructure against unauthorized use, disclosure, modification, damage or loss.

This comprehensive cybersecurity program encompasses:

- Information security and risk management
- Monitoring
- Threat and vulnerability management
- Cyber incident management
- Enterprise business continuity management
- Cyber training and awareness
- Information sharing

ESRMO helps executive branch agencies comply with legal and regulatory requirements as well as technical architecture and industry best practices.

It also works with state agencies, federal and local governments, residents and private-sector businesses to help support secure and sustainable IT services to meet the needs of North Carolina residents.

Enterprise Strategy

The Enterprise Strategy team looks for ways to consolidate and eliminate duplication and use agency input to develop the enterprise strategies outlined in the statewide IT plan.

The team also creates and maintains a statewide IT portfolio that fulfills the state's business needs and effectively leverages state resources to serve agencies and residents. This includes the development and management of the state's enterprise architecture.

The team works closely with agencies across the state on projects, whether they are facilitating strategic planning sessions, streamlining business processes or helping to architect sound solutions.

Government Data Analytics Center

The Government Data Analytics Center (GDAC) integrates data and develops analytics to support business needs associated with criminal justice, child safety, fraud, compliance, health care and longitudinal and performance analysis.

Four technical environments support the GDAC:

- Criminal Justice Law Enforcement Automated Data System (CJLEADS)
- Fraud and Compliance (NC FACTS)
- Health Information Exchange (NC HealthConnex)
- NC OneMap

Optimized Agencies

Session Law 2015-241 provided the opportunity to consolidate and optimize IT resources and staff from various state agencies. Staff from the following have already become part of NCDIT:

- Department of Administration
- Department of Environmental Quality
- Department of Military and Veterans Affairs
- Department of Natural and Cultural Resources
- Office of State Budget and Management
- Department of Public Safety
- Department of Transportation
- Office of State Human Resources

NCDIT is working to share resources and knowledge across these agencies to best leverage resources to have better solution outcomes and to ultimately reduce costs.

Service Delivery

The Service Delivery division partners with customers in agencies, local government, and education entities to provide reliable, cost effective services that meet current and future requirements, service levels and budgets.

Solutions Delivery

Solutions Delivery works with state agencies, local governments and universities across North Carolina to identify and implement IT solutions to meet business needs.

The team is engaged throughout the project life cycle — from gathering requirements and designing the solution to managing IT projects and conducting quality testing.

In addition, the team provides a full-service web content management platform that leverages open-source technology, as well as digital content strategy guidance and training.

The Solutions Delivery team works with state agencies to acquire IT solutions that meet agency business needs, improving how government interacts with the public and ensuring that essential services are provided through a consistent, secure and accessible online presence at a cost savings for taxpayers.

Statewide IT Procurement

The Statewide IT Procurement Office establishes processes, specifications and standards for IT products and services that are purchased, licensed or leased by state agencies and educational entities.

The team's goal is to deliver efficient, responsive and cost-effective IT procurement services while providing government entities with technology that meets their needs.

Each year, the team reviews hundreds of solicitations and authorizes government organizations to award technology goods and services that better serve the residents of North Carolina.

Boards and Commissions

Six boards and commissions are administratively housed in and supported by NCDIT or chaired by the state chief information officer.

N.C. 911 Board

Criminal Justice Information Network Governing Board

N.C. Geographic Information Coordinating Council

Governor's Task Force on Connecting North Carolina

N.C. Health Information Exchange Authority

Information Technology Strategy Board

N.C. 911 Board

The N.C. 911 Board was created to consolidate the state's enhanced 911 system under a single board with a uniform 911 service charge to integrate the state's 911 system, enhance efficiency and accountability and create a level competitive playing field among voice communication technologies.

The board plays an integral role in ensuring adequate funding to maintain and expand 911 capabilities across the state.

Criminal Justice Info. Network Governing Board

The Criminal Justice Information Network Governing Board is housed in DIT and was established to operate the State's Criminal Justice Information Network (CJIN). CJIN exists to provide the governmental and technical information systems infrastructure for state and local governmental public safety and justice functions and to efficiently share criminal justice and juvenile justice information among law enforcement, judicial, and corrections agencies.

The board is made up of 21 members appointed by the Governor, General Assembly, Attorney General, Chief Justice of the NC Supreme Court, State Chief Information Officer, and the President of the North Carolina Chapter of the Association of Public Communications Officials International.

Geographic Info. Coordinating Council

The N.C. Geographic Information Coordinating Council was established by the N.C. General Assembly to develop policies regarding the use of geographic information, geographic information systems and related technologies.

The GICC advises the governor and the N.C. General Assembly regarding responsibilities and funding for geographic information management and use. The organization consists of volunteers from the public and private sector whose goals are to:

- Collaborate in geographic information and systems, involving state, federal and local government agencies, academic institutions, private organizations and individuals across the state.

- Improve the quality, access, cost and utility of geographic information and resources as well as promote geographic information as a strategic resource.

- Efficiently collect, develop and use geographic information through voluntary exchange and sharing of data and technical know-how.

- Explore, guide and provide a framework for coordination including developing standards, planning strategically, resolving policy and technical issues as well as providing central direction and oversight.

Governor's Task Force on Connecting N.C.

Gov. Roy Cooper issued Executive Order 91 in 2019 to expand broadband access across North Carolina. The order established the Governor's Task Force on Connecting North Carolina, which directs state government leaders to identify and remove barriers to affordable, high-speed internet access, eliminate the homework gap that results from students not having internet access and facilitate private-sector deployment of last mile infrastructure. The task force is chaired by the state chief information officer.

N.C. Health Information Exchange Authority

The N.C. Health Information Exchange Authority operates North Carolina's state-designated health information exchange, NC HealthConnex, a secure, standardized electronic system in which providers can share important patient health information.

Established by the General Assembly in late 2015 (NCGS 90-414.7(b)(2), the legislatively-appointed 11-member advisory board for the N.C. Health Information Exchange Authority provides consultation to the Authority on matters pertaining to administration and operation of the HIE Network and statewide health information exchange.

NCDIT and NCDHHS Secretary's as well as the GDAC Director are ex-officio members. Additional membership is comprised of representatives from the health care community and the state health plan.

This modernized health information exchange brings added value to conversations happening at all levels in the health care industry.

By breaking down information silos between providers, it helps achieve greater medical outcomes for patients and creates efficiencies in state-funded health care programs.

Providers who receive state funds (e.g., Medicaid, State Health Plan) are required by N.C.G.S. 90-414.4 to connect to NC HealthConnex by 2021 to continue to receive payments for services they provide.

Information Technology Strategy Board

Established in 2019 by the N.C. General Assembly, the Information Technology Strategy Board plays a critical role in defining and planning North Carolina's enterprise technology projects, advising on the prioritization of those projects and identifying areas where funding adjustments might be needed.

The board also utilizes industry best practices to guide the State Information Technology Plan.

The state chief information officer serves as the chair of the 12-person Information Technology Strategy Board, which also includes six North Carolina residents — with backgrounds and familiarity with business system technology, information systems or telecommunications — who are appointed by the governor and leadership of the General Assembly.

Other members include the state budget officer, the president of the University of North Carolina System, president of the N.C. Community College System, secretary of administration and the state auditor as a non-voting member.
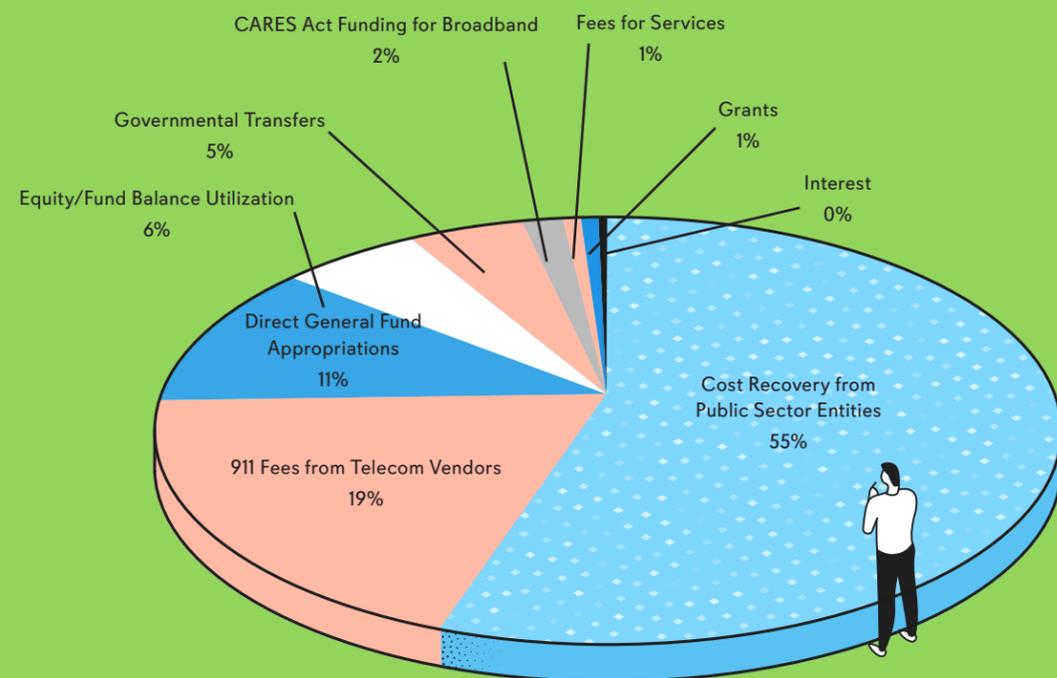
Financial Information

NCDIT is supported financially by several primary funding sources, including cost recovery from public sector entities for IT staffing and services, 911 fees from telecom vendors and direct general fund appropriations.

Other support varies by year, and the following is a list of the department's funding for FY 2020:

- Cost recovery from public sector entities ($292 million)
- 911 fees from telecom vendors (fees restricted to use by N.C. 911 Board) ($103 million)
- Direct General Fund appropriations ($59 million)
- Equity/Fund Balance utilization ($31 million)
- Governmental transfers ($26 million)
- CARES Act funding for broadband (appropriated May 2020) ($9 million)
- Fees for services ($4 million)
- Grants ($4 million)
- Interest ($2 million)

Budgeted funding sources as of June 30, 2020:

NCDIT funding is used to support specific programs and activities across multiple divisions. Significant programs and activities as of June 30, 2020, include:

- Computing and telecom services provided to state agencies and other public sector entities across North Carolina ($186 million)
- Support of 911 communication activities across North Carolina ($133 million)
- IT staffing for optimized executive branch agencies ($85 million)
- Government Data Analytics Center - Health Information Exchange Authority, Center for Geographic Information and Analysis, Justice Integrated Network ($51 million)
- Broadband and GREAT grant activities ($26 million)
- IT projects and strategic services ($20 million)
- Agency administration and statewide IT procurement ($19 million)
- Cybersecurity response and risk management ($10 million)

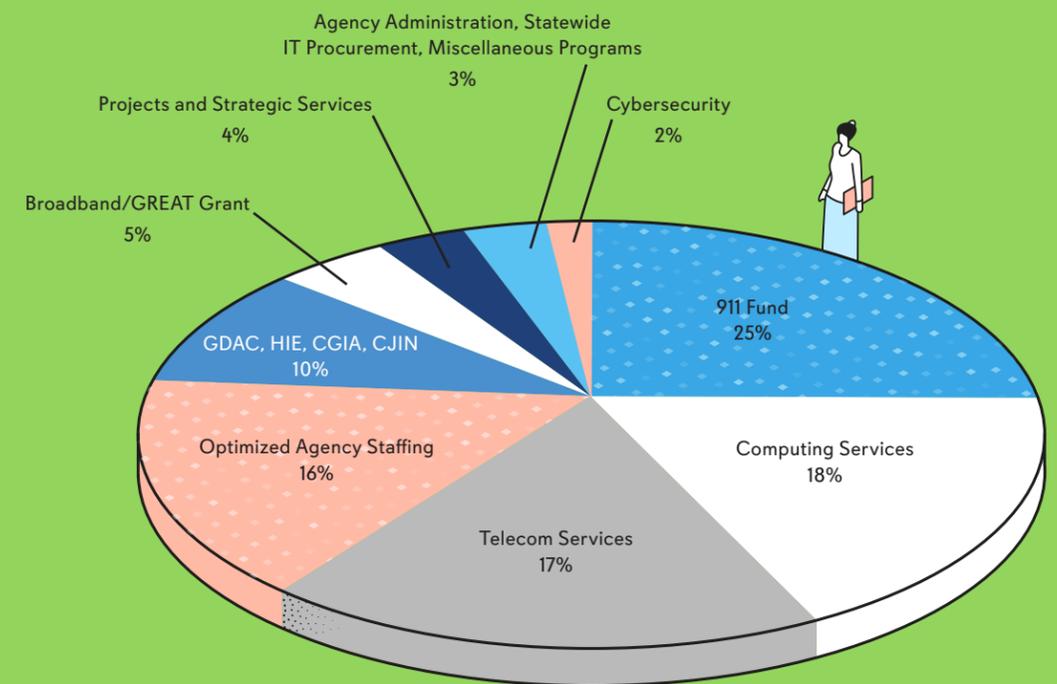Budget expenditures as of June 30, 2020:

NOTE: Governmental transfers have increased as a proportion of NCDIT's budget as optimized agency IT staff are transitioned to NCDIT. CARES Act funds are non-recurring and are not expected to be part of future budgets unless additional rounds are appropriated by the federal government.

CARES Act Funding for Broadband 2%
Fees for Services 1%
Governmental Transfers 5%
Grants 1%
Equity/Fund Balance Utilization 6%
Interest 0%
Direct General Fund Appropriations 11%
Cost Recovery from Public Sector Entities 55%
911 Fees from Telecom Vendors 19%

Agency Administration, Statewide IT Procurement, Miscellaneous Programs 3%
Projects and Strategic Services 4%
Cybersecurity 2%
Broadband/GREAT Grant 5%
911 Fund 25%
GDAC, HIE, CGIA, CJIN 10%
Computing Services 18%
Optimized Agency Staffing 16%
Telecom Services 17%

Vision, Mission and Values

Vision

To foster a culture of innovation and operational excellence.

Mission

To promote a stronger North Carolina that connects customers, residents, businesses, education and government.

Values:

- Collaboration
- Customer Service
- Agility
- Accountability
- Innovation

Priorities and Goals

Priorities

- Broadband Expansion
- Cybersecurity
- Digital Transformation
- State and Local Government Collaboration
- Workforce Development, Recruitment and Retention

Goals

- Goal 1 - Secure IT systems and infrastructure: Provide a resilient infrastructure that mitigates risk, supports business continuity, provides security and privacy of the state's and citizens' data and supports secure collaboration and information sharing.
- Goal 2 - Deepen trusted partnerships: Support and empower the business of state government by improving processes, enhancing cross-agency collaboration and cooperation and establishing and managing IT standards.
- Goal 3 - Improve the management and transparency of IT: Better utilize the state's IT resources and data, increasing visibility into what the state has, what it costs and how the state uses it.
- Goal 4 - Cultivate our IT workforce: Attract and develop a diverse, engaged community of IT professionals.
- Goal 5 - Empower our citizens through technology: Provide transparent, easy-to-use and customer-focused government and student services.
- Goal 6 - Modernize and centralize IT operations: Modernize and centralize technology operations to effectively support a 21st century government.

Priority Progress

The goals and objectives in NCDIT's strategic plan align with agency priorities but do not encompass all the activities undertaken in FY 2020 to make these successful.

This document outlines the additional activities that have contributed to progress, as well as considerations for FY 2021.

Broadband

Cybersecurity

Digital Transformation

State and Local Government Collaboration

Workforce Development, Recruitment and Retention

Broadband

Access to the internet drives economic development and is an essential component to improving public safety and public health.

It is also an absolute necessity in and outside K-12 classrooms and for the 21st century world of online work, commerce, communications, entertainment and information.

Without a broadband connection, residents in rural and otherwise underserved communities are unable to fully access telemedicine.

Farmers are unable to leverage precision agriculture.

Businesses are unable to participate in online commerce and millions of students struggle to keep up with their school work. The COVID-19 pandemic has exacerbated these issues.

Broadband access is one of Gov. Roy Cooper's top priorities and NCDIT's Broadband Infrastructure Office is leading the state's efforts.

The office works collaboratively with state, local, federal, private and nonprofit partners to both draw attention to the digital divide in the state and work to close the gap.

Broadband Office's dashboards inform stakeholders and policymakers

As part of the feasibility study, "Carolina Crosscut: Broadband and Telehealth in North Carolina's Appalachian Coal-Impacted Communities," given the large number of variables, the different units of measurement and the size of the project area, NCDIT's Broadband Infrastructure Office and project partners determined data visualizations would assist stakeholders and policymakers in using the collected data to inform the development of programs, policies or tools to increasebroadband and telehealth access and adoption in the study area.

With the assistance of the Friday Institute for Educational Innovation, the team designed three dashboards to assist decisionmakers and stakeholders as they view the region's broadband and health disparities.

Highlights and Accomplishments

GREAT Grant Program

- Awarded $16 million through the Growing Rural Economies through Access to Technology (GREAT) Grant program. This funding is combined with a match from internet service providers, and the projects are expected to connect an additional 11,091 households and 445 businesses, agricultural operations and community anchor institutions in rural communities. Since its creation in 2018, the GREAT Grant program has provided nearly $26 million in state investment to connect more than 21,000 households, businesses and agricultural operations in 26 Tier 1 counties to high-speed internet. The state funding was matched by more than $20 million in private investment.

Data Collection and Mapping

- Compiled and published Broadband Indices — two unique measures designed to create a more accurate picture of the state's broadband access, adoption and the resulting digital divide.
- Completed a survey in collaboration with the North Carolina Farm Bureau to gauge farmers' use of and access to broadband in farm operations. The survey supported the finding in the Broadband Infrastructure Office's Broadband Farm Report.
- Launched the N.C. Broadband Survey and Speed Test statewide to get a more accurate and granular picture of broadband access and adoption to determine need and to inform policy, research and funding recommendations.

The Governor's Task Force on Connecting North Carolina

- Presented its recommendations to Gov. Roy Cooper in January 2020 and focused on implementing those recommendations.

- Gov. Cooper established the task force in 2019 as part of Executive Order 91 to "promote and implement actions that equitably expand broadband access in North Carolina." Since its creation, it has met monthly to build partnerships between agencies and collaborate to expand broadband access and facilitate broadband adoption throughout the state. Staffed by the Broadband Infrastructure Office, the task force is comprised of leadership from the departments of Information Technology, Health and Human Services, Commerce, Administration, Public Safety, Transportation and Natural and Cultural Resources, as well as the director of the Office of State Budget and Management. Hometown Strong and the N.C. Business Committee for Education were added to the task force in FY 2020.

N.C. Department of Health and Human Services Office of Rural Health Partnership

- Received $633,940 from the Appalachian Regional Commission and a matching award of $97,200 from the Dogwood Health Trust for the Healthy and Connected Workforce initiative. Through the initiative, NCDIT, the N.C. Department of Health and Human Services' Office of Rural Health and their partners are working to implement a robust digital inclusion program while simultaneously increasing access to health care and economic opportunity for workers, vulnerable populations and disadvantaged groups in Macon, Madison and Mitchell counties.
- Received a $98,273 Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) grant to conduct a feasibility study, "Carolina Crosscut: Broadband and Telehealth in North Carolina's Appalachian Coal-Impacted Communities." The report and accompanying dashboards examined the broadband, health care and telehealth assets — including the health disparities and broadband gaps as well as opportunities – for the 20 counties in North Carolina's Appalachian region that are most affected by the coal industry. The additional POWER grant for the pilot was awarded based on the findings of the feasibility study.

Gap pilot program expanded access and developed digital literacy

The Homework Gap Pilot Program, funded by the Federal Institute of Museum and Library Services, and in partnership with the North Carolina Department of Information Technology, was implemented in Caswell, Hyde, Robeson and Mitchell counties in late 2019.

The program reduced the homework gap among participants, expanded access to digital learning resources and helped develop digital literacy skills among student and guardian participants. The

program also helped strengthen local partnerships between the community and library systems.

"There were a few parents who didn't have computer literacy at all," said one library staffer. "So, having especially those first few classes on computer skills really helped."

"Learning more about security for my child on social media and what to watch out for to prevent computer viruses was really helpful," said one parent.

Digital Inclusion

- Created "Building a New Digital Economy" (BAND-NC) to provide $5,000 in rapid-response community innovation mini-grants across the state. A partnership between the Institute for Emerging Issues at North Carolina State University and with principal support from the John M. Belk Endowment, the grant funds local digital inclusion projects to meet unmet community needs, including internet access, devices to meet residents' needs and the know-how to use them.
- Created a Digital Inclusion Plan template and guide to assist communities in creating dedicated plans to foster digital inclusion and

strive for digital equity.
- Held quarterly meetings of the N.C. Digital Equity and Inclusion Collaborative, bringing together digital inclusion leaders and experts throughout the state to who are working toward digital equity.
- Expanded the Homework Gap Pilot Program to Caswell, Hyde and Mitchell counties, based on the success of a pilot in Robeson County. The pilot partnered the local school district and the regional library to provide Wi-Fi hotspots and digital literacy workshops to 34 families. The county also partnered with Kramden Institute to provide computers to families in need. The program is a partnership with the

State Library of North Carolina and is funded by the Institute of Museum and Library Services.
- The Institute of Museum and Library Services awarded the Homework Gap Pilot a $99,620 one-year expansion grant to adapt and modify it for online delivery during the COVID-19 pandemic.

Technical Assistance

A key role of the Broadband Infrastructure Office's Technical Assistance Team is to work with counties, communities and broadband providers to provide broadband expertise, technical support and to facilitate broadband planning and

projects across the state.

The Technical Assistance Team works with communities to:

- Understand current broadband availability
- Locate unserved and underserved businesses and residents
- Identify assets relevant to broadband deployment
- Build partnerships with broadband service providers
- Identify opportunities to leverage assets, reduce barriers and help make the business case
- Identify funding opportunities for broadband planning and projects

Additional focus areas this year included:

- Response to resident inquiries on broadband
- Support and distribution of N.C. Broadband Survey
- Participation in Hometown Strong county planning efforts
- Assistance with distribution of cellular equipment and public Wi-Fi efforts as part of COVID-19 relief
- Review of Broadband RFIs/RFPs from local governments
- Broadband 101 trainings, upon request, for regional councils of government
- Assistance with technical review and monitoring of GREAT Grants
- Support to other state agencies on broadband efforts, such as the N.C. Department of Health and Human

Services' Migrant Housing Internet Connectivity project as well as COVID-19 relief projects

The office has touched almost every county in the state through these efforts. Although the Broadband Infrastructure Office cannot always provide a solution, the Technical Assistance Team offers information regarding broadband providers in the inquirers' area, reaches out directly to providers to investigate possible connections, shares information on resources and adds relevant data points to Broadband Infrastructure Office maps.

In addition, unserved addresses are included in the office's unserved area maps.

FirstTech

The Broadband Infrastructure Office houses the First Responder Emerging Technologies (FirstTech) program.

FirstTech has close relationships with federal, state and local partners to address the broadband gaps within the first responder community.

Although the FirstTech program's work is broad, some of the key highlights from FY 2020 include:

- Technology support to N.C. Emergency Management, deploying a collaboration tool discovered by FirstTech
- Federal grant management for the delivery of data-sharing workshops to first responders
- Partnership with UNC-TV to pilot a nationwide paging concept that was developed at FirstTech and

is now being funded by the U.S. Department of Homeland Security

Tracking the deployment of the federal FirstNet cellular project to increase rural connectivity.

Leadership in FCC Broadband Deployment Advisory Committee Working Group

The FirstTech program director continued the role of chairing the Broadband Deployment Advisory Committee's Disaster Response and Recovery Working Group in FY 2020.

The working group was comprised of representatives across the United States, from both public and private sectors.

Working to produce a consensus-driven document of best practices for keeping the public connected during and after disasters, the group wrapped up its initial report in March 2020.

The working group was quickly recognized by the commissioner's office of the Federal Communications Commission to produce a second report specific to broadband and pandemics.

The working group completed the COVID-19 report within five months and was unanimously approved by the Broadband Deployment Advisory Committee.

Looking forward

Although the digital divide is shrinking, there are parts of rural North Carolina that still do not have access to
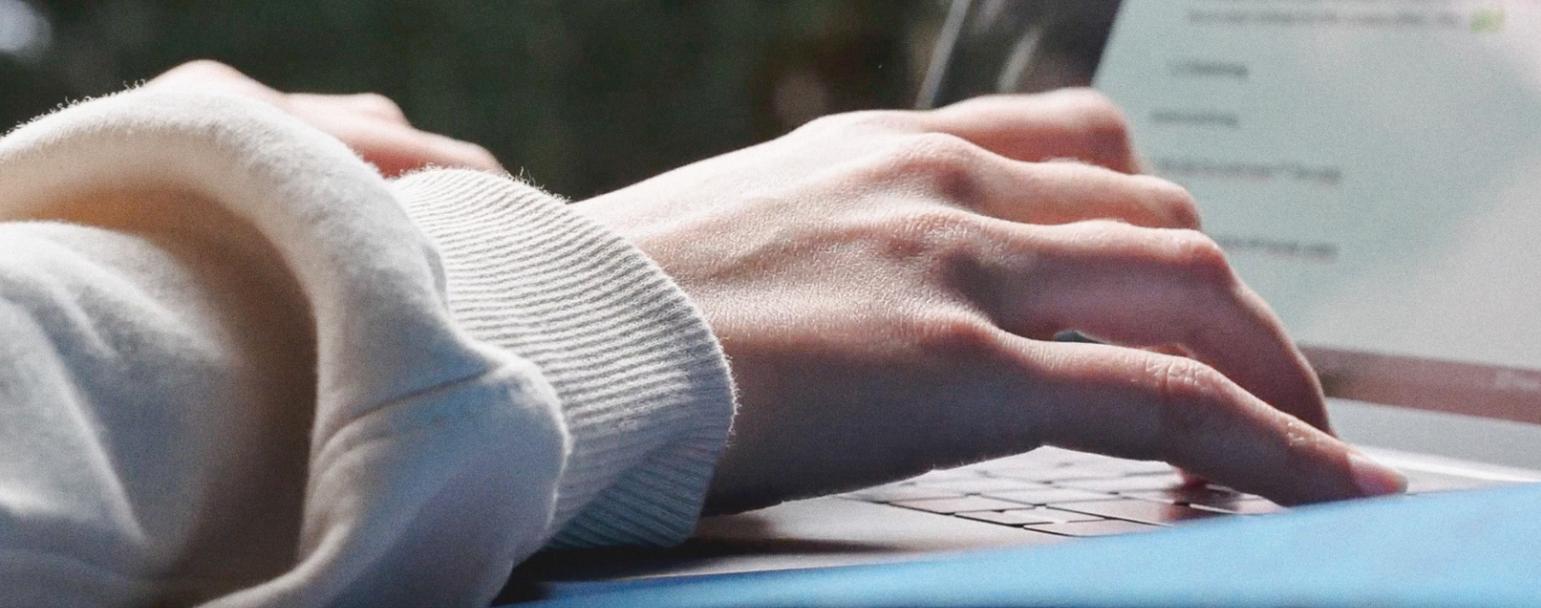
broadband and still others that cannot afford it.

The Broadband Infrastructure Office will look for other funding opportunities while continuing to work with the Governor's Office and the

N.C. General Assembly to secure additional funding to build the "last mile" infrastructure needed to connect people and businesses.

The office will also continue

to bring awareness to this issue through the Governor's Task Force on Connecting North Carolina and building partnerships with the private sector and local governments to extend broadband access.

Cybersecurity

Securing the data that the state collects from North Carolina residents is paramount.

It must remain a critical element embedded in all projects and processes for legacy applications and as NCDIT adopts new

technologies that enhance the public's interactions with state and local government.

Residents expect privacy protections for their data and that it is being used responsibly and managed safely.

NCDIT has focused on making the state's systems and infrastructure more secure by strengthening its cybersecurity posture with stronger security controls as well as cybersecurity awareness, exercises and training for state employees.

NCDIT loaner laptops aid Durham County after 2020 ransomware attack

When Durham County was hit with a ransomware attack in February 2020, NCDIT's cybersecurity team immediately responded and offered its assistance.

One immediate action was to provide loaner laptops to the county so it could get back up and running as quickly as possible.

The NCDIT Enterprise Endpoint Management Team delivered 25 laptops to the Durham County IT group.

Offering loaner laptops was an effort that NCDIT Chief Customer Officer Jon Minshew and his team started a few years ago when they realized the department had a surplus of older laptops that could be very useful to local agencies and organizations hit by a

ransomware attack or other emergency.

Minshew's team is always looking for creative and innovative solutions they can provide their customers.

"The cyberattack devastated our county IT infrastructure, including all end user devices, rendering everything useless overnight," said Ari Schein, deputy emergency manager for Durham County Office of Emergency Services.

"Loaner laptops from NCDIT and other

sources were distributed across the spectrum of mission-essential functions and were able to quickly restore the county to a functional status."

In June 2020, NCDIT delivered 26 loaner laptops and travel cords to Person County and then again to Chatham County in October 2020 after each county faced a ransomware attack.

NCDIT also pulled together 246 laptops over a nine-month period to loan to the N.C. Division of Employment Security to provide to contractors to process the major increase in unemployment claims due to the pandemic, starting in March 2020.

To date, 202 of these devices have been officially transferred to the division.

DIT prepared in advance to protect election

Protecting the 2020 general election results in North Carolina began long before November 3 votes were cast.

Work started a year earlier with a unique, joint collaborative – the N.C. Department of Information Technology, N.C. Emergency Management, N.C. National Guard, N.C. State Board of Elections and dozens of other local, state and federal partners – doing everything from synchronizing communications between participating organizations to providing cybersecurity practices

and training.

"As we planned for elections and responded to any cybersecurity issues at the state and county levels, NCDIT and its partners were with us every step of the way," State Board Executive Director Karen Brinson Bell said.

Other efforts involved tabletop exercises, monthly meetings and reviews with the State Board, and assessing network infrastructures in the state's 100 counties to identify and remediate issues before the election.

Highlights and Accomplishments

- Securely implemented three cloud environments — as an extension of the state's two data centers — allowing agencies to easily use and transition to the cloud while maintaining statewide security standards and best practices, such as Zero Trust and micro-segmentation security models.

- Standardized for cloud deployments, desktop and server operating system images (Linux and Microsoft Windows) that include a statewide-approved endpoint monitoring solution. This established a hardened baseline for operating systems while ensuring visibility and monitoring of security posture.

- Supported the investigation of 782 incidents involving compromised email accounts.

- Increased the deployment of a threat-hunting agent to more than 30,000 endpoints across state agencies.

- Manually investigated 1,046 security alerts received and triaged them through the state Security Operations Center.

- Investigated and assisted resolution of 420 web-related security incidents.

- Partnered with the N.C. Department of Public Safety, N.C. 2-1-1 and the Cybercrime Support Network to establish a program to provide trustworthy information for North Carolina residents recovering from cybercrime.

- Increased NCDIT's cybersecurity awareness training completion rate from 89% to more than 90%.

- Conducted phishing exercises across state agencies to bring awareness and remediation to state employees.

- Conducted vulnerability scans to identify risks for remediation across the enterprise.

- Provided monitoring support and incident response for North Carolina's primary elections and supported planning and coordination efforts for the Republican National Convention and general election.

- Hosted an annual cybersecurity symposium for local, state and academic institutions.

Thompson honored by Tech magazine

State Chief Risk Officer Maria Thompson was named one of Government Technology Magazine's Top 25 Doers, Dreamers and Drivers for her thought leadership in cybersecurity and how she thinks cybersecurity will look for the public sector in the future.

Thompson believes that an insider threat program is critical for risk mitigation, managing confidentiality and protecting data. This includes employee monitoring and cybersecurity education.

Looking forward

The N.C. Department of Information Technology will continue to focus on orchestration (integrating tools to enable automation), automation and response, working to increase the speed of identification, detection, response and recovery from cyber incidents.

With appropriate funding, the department will also work to expand its cyber apprenticeship program, increase cyber education and awareness in state agencies and local governments, complete security assessments for the 58 counties that have not yet been assessed and expand the department's ability to gain visibility into and compliance of endpoints operating in remote environments. In addition, NCDIT will work to expand statewide contracts for security services, beginning with local governments and schools.

Looking forward

NCDIT will continue to work with state agencies and local governments to make the digital experience, including an enhanced web experience, the best it can be for the public.

Digital Transformation

Highlights and Accomplishments

Digital transformation is about changing the way state agencies deliver services, resources and information to meet the public's expectations — whether residents, visitors or businesses.

It is about enabling seamless services anytime, anywhere and on any device, but especially mobile devices. The public expects great digital experiences when engaging with state government and with the same level of sophistication, ease-of-use and simplicity as the private sector.

NCDIT is working with state agencies and local governments to execute a digital strategy that meets those expectation. To be successful, the strategy must extend beyond IT and include people, process and technology.

People
Collaborating with partners in state government, the private sector, universities, nonprofits and residents.

Process
Continuously measuring and improving our processes using Lean Six Sigma and customer experience principles. Data is at the heart of this.

Technology
Leveraging updated, integrated technical platforms that enable state and local government entities to transform the way they deliver services.

DEQ launched drone project and nabbed national award for business innovation

North Carolina is home to the largest and most productive estuarine system on the East Coast.

The fish, shrimp, crabs and shellfish harvested here are a large component of North Carolina's coastal economy.

To promote shellfish production and to protect these vital habitats, the N.C. Department of Environmental Quality's Division of Marine Fisheries maps and samples the benthic habitats of the coastal waters, monitoring habitat health and shellfish population.

Traditional mapping methods averaged 10 acres a day with three field staff.

To improve this process and save countless hours, NCDIT worked with the Division of Marine Fisheries to implement a drone mapping program.

"We partnered with the University of North Carolina at Wilmington to do case studies with habitat mapping, and in the first day or two of those case studies, we quickly realized this was going to be a game changer," said Mike Griffin, NCDIT's lead geographic information systems architect on the project.

"There are so many different avenues you can take with this, and just those few case studies we did with UNCW, we were doing 80 acres of habitat mapping

in 20 minutes – something that would have taken eight or nine days with traditional methods."

That is a 5,900% increase in productivity for a two-person team.

It took more than 30 years to map the first 90% of North Carolina's estuaries, and once the drone program took off, the Division of Marine Fisheries team was able to complete the final 10% of the project in 12 days.

The National Association of State Chief Information Officers recognized the project with its 2020 Award for Business Process Innovation.

- Enabled Agile and DevOps capabilities with staff through training, coaching and mentoring. DevOps combines cultural philosophies, practices and tools to increase NCDIT's ability to deliver applications and services at high velocity. This approach enables the department to evolve and improve products and solutions at a faster pace than using traditional software development and infrastructure management processes. NCDIT posted a bid for a vendor to create a more robust program. A contract is expected to be awarded in FY 2021.

- Enabled a cloud management platform that encompasses Amazon Web Services, Azure and Google, giving agencies flexibility in cost and hosting functionality.

- Enabled an Integration Platform as a Service (IPaaS) via Dell Boomi. Dell Boomi has data integration as well as API (application programming interface) management capabilities. Agencies no longer have to rely on a centralized IT team to develop integrations. This empowers agencies to leverage the IPaaS platform and to develop and deploy application integrations on their own.

- Leveraged a statewide contract

vehicle for the PayIt platform (the state's digital wallet). The platform will continue to be expanded to local government as well as other state entities. More than 3 million people are using the platform currently through MyNCDMV to renew their licenses and vehicle registrations. The goal is to provide an application that allows a resident to complete and track all their major transactions with state and local government in one place.

- Implemented Sprinklr in spring 2020 to help manage the state's social media presence as well as to enable sentiment analysis for the COVID-19 pandemic. Once fully implemented, this tool will enable NCDIT to leverage marketing and communications to gather data about how the public views its interactions with government to help identify priorities and pain points for improvements.

- Issued a bid for a new identity and access management solution for residents, visitors and businesses in spring 2020, with a contract award expected in second half of FY 2021.

- Leveraged an existing contract to undertake an intelligent business process management (iBPM) proof-of-concept to prove out application

development capabilities that can be leveraged for more complex digital transactions. This platform will provide process orchestration as well as workflow and intelligent automation (IA) capabilities for existing applications without having to redevelop those applications on another platform. Utilizing an additional platform available via contract, an additional proof-of-concept with similar proof points was executed in first half of FY 2021. Automation helps remove manual tasks, while orchestration brings together all the process under one umbrella. Combined with IA, the iBPM will improve efficiency and reduce cost. In addition, leveraging the two platforms will further achieve economies of scale because they are already widely used.

- Combining the domains of people, process and technology, initiated a citizen portal project in the later part of FY 2020 to transform public services. The project has two phases: Phase I includes cataloging all current citizen services and launching a new MyNC website, which is designed with the end-user in mind. Phase II will include optimizing business processes as well as simplifying the way residents consume services, resources and information.

State and Local Government Collaboration

NCDIT has always worked collaboratively with state and local entities. Both must manage with limited resources. Leveraging economies of scale, where possible, reduces this burden, particularly for smaller local governments. In FY 2020 much of

NCDIT's collaborative effort was focused on cybersecurity, public safety and public health.

The following are some of the highlights of NCDIT's collaboration efforts during FY 2020.

Cybersecurity

- Supported 16 state, local and academic institutions with incident response (IR) support, remediation and recovery from ransomware attacks by funding and supporting the National Guard's North Carolina Assessment and Assist Team's IR efforts.

- Deployed iSensors on 20 county infrastructures to proactively monitor and block malicious attacks to local networks and to facilitate

the information sharing of threats.

- Implemented continuous monitoring of external networks for 100 counties as well as executive branch state agencies, 58 community colleges and 118 local education authorities using security scoring mechanisms that report on vulnerabilities identified and changes to the environment. Reports are automatically sent to entities when their security

posture is impacted by changes. (Community colleges and local education authorities were funded as a result of the CARES Act.)

- Conducted cyber table-top exercises for local government and K-12 organizations being hit heavily by ransomware attacks to build muscle memory on best practice steps to take during a cyber incident, encourage information sharing and expand

cyber knowledge.

- Conducted proactive security assessments on the infrastructure of an additional 23 counties and provided recommended hardening and remediation prioritization.

N.C. 911 Board

- Working with local governments, migrated 64 of the state's 911 call centers (also known as public safety answering points, or PSAPs) to Next Generation 911, an internet-based answering system. This new system, called ESInet, upgrades outdated analog system to modern technology and enables cellphone calls, text messages, pictures and videos to be routed to the appropriate PSAP across a closed, private network via location-based call-routing capabilities. All 127 PSAPs across the state are required to complete the transition to ESInet by July 1, 2021. A $3.9 million federal grant from the National Highway Traffic Safety Administration and National Telecommunications and information Administration will offset the cost of migration particularly in three designated areas – diverse routing installation, geospatial call routing, and cybersecurity assessments.

- The N.C. 911 Board awarded $10.5 million in grants from the state's 911 Fund to support the migration to ESInet, new PSAPs and radio and dispatch upgrades.

N.C. Health Information Exchange Authority

- In a little over four years, under NCDIT's leadership, NC HealthConnex has grown from from 835 facilities in mid-2016 to more than 7,000 health care facilities including 120 hospitals - sending over 700,000 messages daily. The centralized repository has grown from three million unique patient records in early 2016 to over 10 million as of November 2020.

- Kicked off a formal partnership in late 2019 with the North Carolina Area Health Education Centers (NC AHEC) to provide in-person and virtual trainings to health care providers participating in NC HealthConnex.

- Collaborated with NC AHEC to build a library of self-paced video modules that provide participants with valuable training and use cases to support their adoption and use of NC HealthConnex. These opportunities allowed health care providers to have the most up-to-date virtual training and the suite of services throughout the pandemic.

- Reconnected to the Coastal Connect Health Information Exchange, based in Wilmington, through the eHealth Exchange national network to allow patient data to be exchanged to support improved patient care, which is especially important for disaster response.
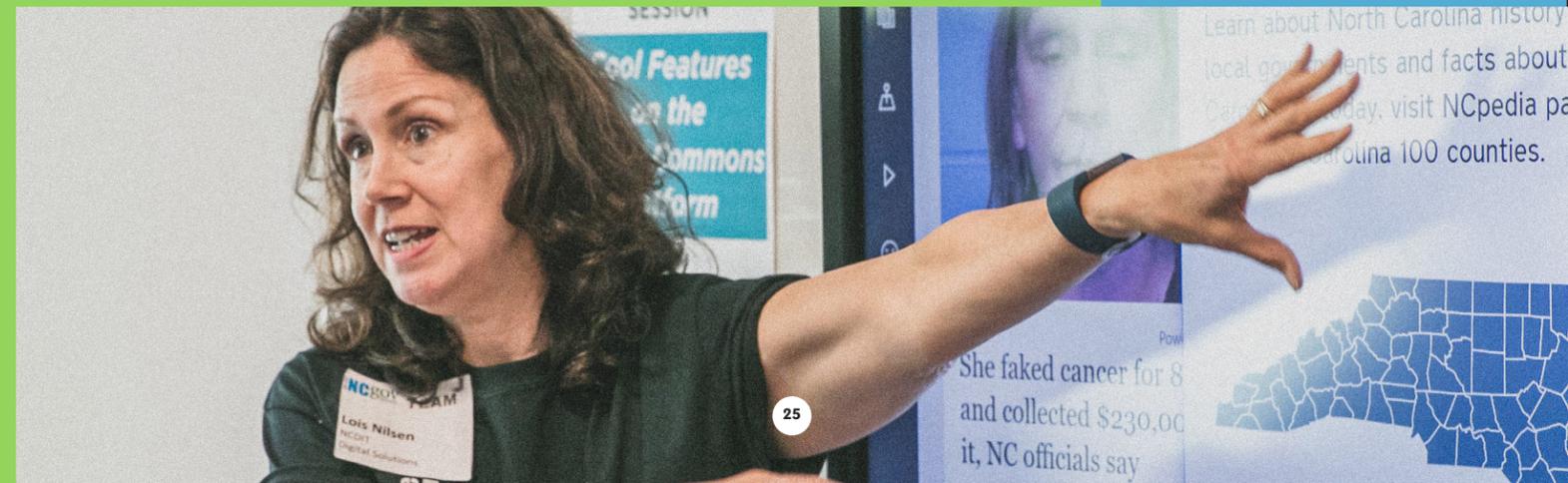
Looking forward

Sharing knowledge and resources across boundaries will make North Carolina stronger. Local government partners, in particular, look to NCDIT for additional support during the COVID-19 pandemic. Given this unprecedented situation, it's even more important to collaborate and share resources.

In FY 2021, NCDIT intends to continue rolling out ESInet to PSAPs, increase usage and access to NC HealthConnex and its services and expand cybersecurity support.

To grow and sustain these relationships, the department needs adequate funding for programs like the partnership with the National Guard, the cyber apprenticeship program and iSensor monitoring for county infrastructure.

NCDIT also initiated a partnership with the N.C. Military Business Center, which will include the N.C. Department of Commerce, to help small businesses that do business with the U.S. Department of Defense.

Highlights and Accomplishments

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Workforce Development

Developing a strong IT workforce within state government is essential to operations and services. To help grow the IT workforce across the state, NCDIT has placed a particular focus on veterans and demographics that are traditionally under-represented in the IT community.

The department is fortunate to have numerous women leading divisions in the agency. More than 30% of its senior leadership are women, and more than 400 of 1,100 employees are women. Agency leadership recognizes, however, that more must be done to increase the number of women in the workforce, as well as to increase diversity overall.

To this end, several pipeline projects are underway with local universities, as well as creating more partnerships that encourage diversity in the workplace, although those efforts slowed after the pandemic.

Various NCDIT leaders are active in organizations committed to expanding roles for women in IT, including Rewriting the Code, She Leads Tech and Girls Go Cyberstart. Girls Go Cyberstart is a national, virtual cybersecurity competition for high school girls, with the goal of introducing STEM fields, specifically cybersecurity, to girls at an early age. NCDIT has been a sponsor of the program since its inception, encouraging North Carolina students to participate. Numerous local students have placed in the top 10 of the national competition.

NCDIT also has a strong veterans cybersecurity apprenticeship program that was funded in 2016 by the N.C. General Assembly. Leadership is hopeful that the program will get additional funding in the 2021 state budget and can be expanded to include more women and people of color.

Recruitment

NCDIT's HR team increased its focus on attendance at job fairs, participating in seven career fairs. These efforts have helped promote NCDIT as an employer of IT professionals and increase awareness of IT employment opportunities in state government and to build stronger partnerships with other state agencies, community colleges and universities.

NCDIT has emphasized use of statutory exempt designations (EHRA) for vacancies to provide greater flexibility in its recruitment approach. Shifting the organization to an at-will employer will benefit recruitment efforts to source talent and hire skilled professionals quicker. Currently, EHRA positions represent 8% of the overall workforce of permanent full-time positions. This shift will take time to accomplish and will require the current NCDIT workforce to gain a comfort level with EHRA employment and an understanding that, although the employment is at will, it is different than the exempt designations determined by the governor of North Carolina.

Retention

As NCDIT's workforce ages and more IT job opportunities come to the Research Triangle, it is essential to retain talented employees. The department wants to make sure that there are opportunities to collaborate with peers and provide needed training to improve the work environment.

Workforce Development, Recruitment and Retention

NCDIT is committed to developing, recruiting and retaining a skilled and professional workforce. Most of the department's workforce is in or near the Research Triangle Park, where private-sector IT companies abound. This abundance of opportunity makes North Carolina a great place to live but difficult for government to recruit and retain IT talent due to comparatively lower salaries and job classifications that do not reflect modern IT/tech roles.

In addition, 14.3% of NCDIT's workforce is eligible to retire by the end of calendar year 2021.

To address these challenges, the department is looking at new ways to create pipelines to bring in new talent.

While the COVID-19 pandemic forced the department to pause on some initiatives, NCDIT still made great strides in workforce development, recruitment and retention.

Culture Work

NCDIT continues to undergo significant change as a new cabinet department with new leadership, departmental priorities, a new business model and several new divisions under its purview through Session Law 2015-241.

NCDIT is undertaking culture work, beginning with a cultural assessment, to help create a culture that enables it to fully realize its mission, goals and priorities.

A kick-off meeting was held on Feb. 7, 2020 with the 60 top leaders at NCDIT to introduce the initiative, explain the approach and how to effectively communicate with staff desired outcomes of aligning the department's culture to build leaders and staff to carry out the department's goals and priorities.

More than 60% of NCDIT staff participated in a survey, the results of which were presented to senior leadership in March.

Additional senior leadership interviews and focus group sessions designed to further inform the survey results concluded in early August. Work on the next phase of this project will continue in FY 2021.

Training

NCDIT uses Pluralsight to support employees in their existing roles and to train them for new positions as services change or are outdated.

The tool provides 24/7/365 access to courses for in-demand certifications and software development languages as well as other more business-related skill sets.

These programs lay the groundwork for a comprehensive approach to recruiting, hiring and retaining IT employees in North Carolina.

There are 155 teams with 1,023 active members on the Pluralsight platform from within NCDIT and the department will continue to expand use of this tool, as service delivery staff are all required to have training plans in place for FY 2021.

Looking forward

As NCDIT continues to take on IT staff from additional agencies, the department will work to improve the culture, including incorporating the best parts of the cultures of newly added teams.

Expanding Communities of Practice will strengthen the culture of collaboration in NCDIT and across state government. Investing in employees through an expanded training infrastructure will foster the innovative spirit the staff needs to manage the various challenges of state government.

NCDIT will work with the Governor's Office and the N.C. General Assembly to ensure adequate funding and positions to attract the IT talent needed to remain successful.

NCDIT will establish a recruitment network to guide active recruitment strategies, as well as an operational budget to fund recurring program initiatives.

The team will also work to recruit top-tier talent through partnerships with universities and community colleges.

With adequate funding NCDIT will continue programs like the cyber apprenticeship, building on its success to expand internship and apprenticeship opportunities.

Communities of Practice

For NCDIT to be successful, it must become a more open organization that shares ideas, knowledge, resources and skills. NCDIT strives to embody five key characteristics of an open organization – transparency, inclusivity, adaptability, collaboration and community. Truly open organizations exhibit all five.

This cultural shift will not happen overnight, but the department has laid the foundation for this change by inviting state employees to participate in Communities of Practice with a variety of focus areas. All of them have provided a way for individuals to share knowledge and a venue where they can be heard. Participants represent a cross-section of state government, serving agencies across the executive and judicial branches and represent both the IT and business sides of their organizations.

The Communities of Practice have opened the lines of communication between agencies, between silos within agencies and most importantly between NCDIT and the agency business units it serves. Members feel like they are part of a bigger team; all working toward a larger common purpose, directly involved with and providing input for NCDIT decision-making.

Communities of Practice

Community	Description
Agile	This is a new Community of Practice that provides IT professionals with a place to discuss, learn about and promote Agile methodology.
Application Development	This is a new Community of Practice that provides developers across the state a place to share ideas.
Architecture	Members include architects across state government. The community members share ideas related to solutions. The community focuses on topics that are impacting multiple agencies.
Business Analysis	Members include business analysts supporting agencies across the enterprise as well as IT professionals in affiliated roles and domains such as architecture, project management and procurement.
Dynamics O365	This is a new Community of Practice that provides IT employees with a place to discuss, learn about and promote the capabilities of Dynamics O365.
Power BI	This is a new Community of Practice that provides state employees with a place to discuss, learn about and promote the capabilities of Power BI.
Process Improvement	Members include individuals in process improvement roles supporting agencies across the enterprise as well as IT professionals in affiliated roles and domains such as architecture, business analysis, project management and procurement.
Project Management	This Community of Practice represents a group of individuals across North Carolina agencies who share an interest in project management, collaborates with others and seeks continuous improvement strategies.
SharePoint	This is a new Community of Practice that provides state employees with a place to discuss, learn about and promote the capabilities of SharePoint.

COVID-19 Response

The COVID-19 pandemic has had an impact on everyone who lives in, works with or works for the state of North Carolina. The way residents learn, receive medical care and conduct business changed overnight. NCDIT has worked with public health and public safety professionals to provide access to the information they need to keep residents safe.

NCDIT worked with state and local entities to provide residents access to information and services online.

This included the Broadband Infrastructure Office, which worked to increase access to the internet for unserved and underserved communities. These efforts were all undertaken as state employees, including NCDIT, were required to work from home.

To ease the transition and make long-term remote work possible, NCDIT quickly scaled up existing collaboration platforms.

NCDIT aids NCDHHS' social media demand during COVID-19 pandemic

When the COVID-19 pandemic hit North Carolina in early 2020, the N.C. Department of Health and Human Services was inundated with social media activity.

It became critical for the department to be able to manage its outgoing messaging more effectively and respond to the overwhelming audience engagement.

NCDIT identified Sprinklr, a social media engagement platform, to better meet NCDHHS's needs and worked with the department to implement the new solution.

"It was a monumental task to get our hands around the sudden increase in audience," said Amy Dominello Braun, senior manager of Creative and Digital Services for NCDHHS. "Responding to social media comments and private messages has improved dramatically using Sprinklr.

"We can respond to all social media platforms with one dashboard and can also communicate with our team internally as we craft responses to messages. This new tool has also enabled us to create a response database where we keep common answers that we use to quickly respond to constituents and save us lots of time."

The new platform has also enabled NCDHHS to be more efficient in tracking metrics on specific social media posts by topics and campaigns.

"To help us better understand how to craft our messaging and gauge public sentiment, we have created several listening dashboards on issues like testing, vaccines and the launch of our exposure notification app," said Dominello Braun. "Our leadership team is using the dashboard reports to inform decisions and pull in data more quickly."

Provided officials with data to make decisions

- Built bi-directional data exchanges and patient matching services between NC HealthConnex and the state's electronic disease surveillance systems, N.C. Electronic Disease Surveillance System and N.C. Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT), to better monitor the ongoing impact of COVID-19 in North Carolina.

- Developed public health dashboards to enable health care providers to identify emerging trends and at-risk populations to support operations and point-of-care decisions.

- Provided COVID-19 test results delivery services to NC HealthConnex participants to support care coordination and help ensure the safety of frontline providers.

- Provided care management teams with detailed clinical histories and identification of emerging at-risk patients for improved patient care.

- Extended, through CARES Act funds, the Government Data Analytics Center's Unemployment Claimant Benefit Fraud and Compliance solution to support claims for suspected identity theft and fraudulent activity. This solution leverages other state data available within the GDAC to surface anomalies and bundles the individual claimant alerts to streamline investigations, stop payment processing and identify potential overpayments.

- Developed economic recovery dashboards for various agencies and organizations, including the Office of State Budget and Management and N.C. Department of Commerce.

- Developed the Governor's Operational Dashboard, which provides daily updates for the Governor's Office.

- NCDIT's ServiceNow team worked with the N.C. Department of Health and Human Services to create a public-facing portal and catalog workflow to allow for reporting of COVID-19 cases. The portal allows providers across the state, nursing homes and others to gather information for reporting cases, knowledge information on questions and virtual agent support to help during the pandemic. NCDHHS will continue to leverage the portal and knowledge availability after the pandemic as many other divisions within the agency look to move toward this capability to better support the people of North Carolina.

- Supported and continues to support the implementation of two COVID-19 apps, one for patient self-identification and the other for contact tracing.

- Worked with the N.C. Department of Administration's Division of Purchase and Contract to establish a ServiceNow portal to allow agencies to submit electronic requests for personal protective equipment. Among the items requested by and issued to agencies were 4,126 isolation gowns, 286,939 gloves and 2,866,480 non-surgical disposable masks.

- As North Carolina migrates to the Next Generation of 911 service capability, an integral part of the migration is the technical support provided by the 911 Network Monitoring and Assistance Center (NMAC), housed in one of NCDIT's data centers. By using a combination of remote networking and advanced VoIP services, the NMAC staff has maintained 24/7 incident management and incident resolution capability in support of 64 public safety answering points (PSAPs) on the Next Generation 911 service platform. During the pandemic, the NMAC has also provided technical support and incident response coordination for the 63 PSAPs still on legacy systems and has earned high praise for its continued efforts from both the legacy and Next Generation 911 communities.

Collaboration tools expanded for remote working

- Rolled out Microsoft Teams to all state agencies in January 2020, placing NCDIT in an excellent position to lead the successful transition to a remote workforce. Teams use increased from 7,000 users and 235,000 chats in January to more than 23,000 users and 6 million chats by June 2020.

- Increased use of NCIDT's WebEx platform. In January 2020, there were fewer than 1,000 meetings held on NCDIT's WebEx platform. By June 2020, that number increased to more than 4,000 meetings.

- Created a task force to conduct a survey to see what tools are necessary for a long-term work setup that includes significantly higher remote work percentage thanpre-COVID-19.

Protected state's data and cyber infrastructure

- Expanded endpoint security event logging, providing direct input to the state Security Operations

Center to support the surge in remote working as a result of the COVID-19 pandemic. This action assisted in identifying and remediating endpoints that might not be receiving critical security updates.

- Deployed a threat-hunting agent to more than 31,000 endpoints to enhance the patching of third-party applications across decentralized networks as well as to maintain visibility of hardware and software inventory for devices operating remotely This was the first time NCDIT has been able to do this, as many non-consolidated agencies manage their own. As a result of CARES Act funding, expanded continuous monitoring for additional state agencies, 58 community colleges and 118 local education authorities.

- Integrated holistic logging of security events from three cloud environments (Google, Azure and Amazon Web Services), into the state Security Operations Center for end-to-end visibility. This also reduces the excesses pivoting when triaging an event during impact assessments.

Provided rural and low-income communities with internet access

- Worked with the N.C. Business Committee for Education and Hometown Strong, as well as providers and other corporate partners, to help more students who lack home internet access get connected. With donations from AT&T, Google and the Duke Energy Foundation, 205 school buses were equipped with Wi-Fi to provide access in underserved areas in school districts. The buses travel to underserved areas in school districts and park in designated locations, allowing students to turn in assignments, download materials and connect with teachers.

- Launched a public Wi-Fi map to show free access sites (submitted by stakeholders) across the state.

- Issued a special supplementary GREAT Grant round to provide funding to internet service providers to install infrastructure for broadband in unserved and underserved areas.

- Issued the Satellite-Based Broadband Access grant program, providing $2.5 million for residents in underserved communities to apply for a subsidy to help cover the cost of equipment that is attached to a customer's home.

- Assisted Hometown Strong, N.C. Business Committee

for Education, the State Library of North Carolina and the N.C. Department of Public Instruction with initiatives, like N.C. Student Connect, to address the digital divide during the COVID-19 pandemic.

Provided public access to information and services through dashboards and an expanded web presence

- The Government Data Analytics Center and Digital Solutions team provided critical, on-demand web updates for state agencies to make up-to-date information on COVID-19 available to the public.

  - Accomplishments include the North Carolina COVID-19 Information Hub, N.C. Department of Health and Human Services' COVID-19 Response and COVID-19 North Carolina Dashboard. The latter has a series of dashboards with daily updates on the number of cases, hospitalizations, deaths and tests as well as interactive maps to view data by county and outbreaks by clusters, also searchable by county:

    https://www.nc.gov/covid19
    https://covid19.ncdhhs.gov/
    https://covid19.ncdhhs.gov/dashboard

- As a result of the pandemic and the dramatic increase in unemployment claims, NCDIT provided immediate assistance to the N.C. Division of Employment Security by moving its help desk to a cloud platform to accommodate the additional tens of thousands of daily calls. In addition, NCDIT provided 250 laptops to accommodate the temporary remote staff who were brought in to assist with unemployment claims.

Website upgrades: A benefit and education to N.C. voters

During a pandemic and presidential election year, the N.C. State Board of Elections set out in the spring to upgrade its website to a more modern format.

COVID-19 would change how North Carolinians went to the polls, and it was crucial to provide an online resource that would be easier for voters.

"It was a tall task made easier with guidance and support from the N.C. Department of Information Technology," State Board Executive Director Karen Brinson Bell said.

Leveraging expertise from NCDIT's Digital Solutions team,

the State Board, in a matter of months, launched an improved website using the state's Digital Commons platform.

The State Board was able to update and highlight information relevant to the upcoming election, including voting by mail, COVID-19 precautions and deadlines.

NC HealthConnex dashboard shows COVID-19 testing and spread insights

The Government Data Analytics Center (GDAC) collaborated with state agency partners in 2020 to provide analytics and build out dashboards to aid in the state's COVID-19 response efforts.

The NC HealthConnex-developed Medicaid COVID-19 Dashboard was created at the beginning of the pandemic.

This resource has given the state insight to understand the health of certain populations as well as the impact of the pandemic in North Carolina.

The N.C. Health Information Exchange Authority (NC HIEA) maintains a robust repository of clinical data within the state's health information exchange, NC HealthConnex. NC HealthConnex is a

clinical data collection and data sharing service that provides comprehensive, longitudinal patient health records at the point of care.

The data provides insights about who is impacted, where the virus is spreading, who should be tested and who is at the greatest risk.

In partnership with N.C. Division of Public Health and N.C. Division of Health Benefits/Medicaid, the NC HIEA was able to leverage this infrastructure to develop the NC HealthConnex Medicaid COVID-19 Dashboard.

"The NC HealthConnex COVID-19 Dashboard is beautiful and interesting, but more importantly, we use it on a regular basis to understand how the

public health emergency is impacting Medicaid beneficiaries," said Sam Thompson, senior manager at North Carolina Medicaid.

"Moreover, working with NC HIEA on the dashboard has catalyzed our engagement with NC HealthConnex analytics. The adverse circumstances have pushed our partnership to accomplish more since March than we would have in three normal years."

The dashboard presents information about the Medicaid population, such as positive COVID-19 tests, recovered cases, deaths, symptoms, social vulnerabilities and comorbidities. The information is gathered through NC HealthConnex, the census and Medicaid beneficiary files.

Strategic Plan Progress

Objective 2.1: Educate potential customers and employees on who we are, what we do and how to work with us.

Strategy: Educate local governments on NCDIT services.

NCDIT communications staff will work with other NCDIT divisions to create and hold at least 12 outreach engagements at the local level.

In progress

Strategy: Integrate security tools across all state agencies.

The ESRMO will work to integrate security tools across all state agencies.

In progress

Objective 2.2: Increase collaboration among state agencies.

Strategy: Establish new communities of practice.

NCDIT staff in Enterprise Strategy, Enterprise Applications and Solutions Delivery will work to establish three new communities of practice for common skills across the state. These communities will serve as collaborative outlets for individuals and provide opportunities for agencies to work together.

Complete

Strategy: Operationalize the strategic planning module in the Enterprise Portfolio Management Tool.

NCDIT will implement and operationalize the strategic planning module of the Enterprise Portfolio Management Tool.

Complete

Strategy: Operationalize the Technical Architecture Solution Document replacement in the Enterprise Portfolio Management Tool.

NCDIT is working with multiple agencies to replace the existing Technical Architecture Solution Document form and process. The replacement process will require agencies to enter information into the Enterprise Portfolio Management Tool as a project progresses, rather than all at once. This will make it easier for both the agencies and NCDIT to analyze relevant technical architecture information.

Complete

GOAL 1
Secure IT systems and infrastructure: Provide a resilient infrastructure that mitigates risk, supports business continuity, provides security and privacy of the State's and citizens' data and supports secure collaboration and information sharing.

Objective 1.1: Integrate and operationalize cybersecurity tools across all state agencies.

Strategy: Establish a plan for continuous monitoring of the development network.

The Enterprise Security and Risk Management Office (ESRMO) will work with other NCDIT divisions and agencies to develop standard operating procedures and a workflow for incorporating security into the development process.

In progress

Strategy: Integrate security tools across all state agencies.

The ESRMO will work to integrate security tools across all state agencies.

In progress

Objective 1.2: Continue to be a model state for cybersecurity.

Strategy: Establish and implement a continuous monitoring program for counties.

The ESRMO will work with counties to establish and implement a continuous monitoring program, targeting 30% participation. This program will require expansion funds.

On hold

Strategy: Develop an insider threat program.

The ESRMO will work to develop a program to mitigate risks due to insider threats. An insider threat is a threat to an organization's critical assets by trusted individuals — including employees, contractors and business partners — authorized to use the organization's IT systems. Insider threat programs help manage risks through specific prevention, detection and response practices and technologies.

Canceled due to lack of funding

Strategy: Increase utilization of the Enterprise Portfolio Management Tool, beginning with optimized agencies.

NCDIT will work with optimized agencies to expand collection of architectural attributes and diagrams in the tool for strategic analysis.

In progress

Objective 2.3: Catalog the state's data assets through the state's Data Asset Catalog Service.

Strategy: Publish the catalog of critical agency data assets.*

The Government Data Analytics Center will work with other NCDIT divisions and agencies to catalog existing GDAC data assets and critical agency data assets. As part of this effort, GDAC will provide training on how to catalog and classify assets of agencies, enter critical data into the catalog and develop a governance group for the service.

The approach has changed but the initiative is still underway.

In progress

Objective 2.4: Equip the health care community to deliver better and more efficient health care through the health information exchange.

Strategy: Connect providers who receive state funding through the state-designated health information exchange, NC HealthConnex.

The N.C. Health Information Exchange Authority (NC HIEA) will work to fully deliver the state mandate to connect providers. A Medicaid provider is "connected" when its clinical and demographic information pertaining to services paid for by Medicaid and other state-funded health care funds is being sent to NC HealthConnex, at least twice daily — either through a direct connection or via a hub (i.e., a larger system with which it participates, another regional health information exchange with which it participates or an electronic health records vendor). Participation agreements signed with the designated entity would need to list all affiliate connections. NC HealthConnex will receive data from approximately 98% of the state's health care providers when the mandate is fully delivered.

Complete

Strategy: Support the data strategy for the Medicaid move to managed care.

Per Session Law 2015-241, the NC HIEA is directed to support Medicaid's transformation and will provide clinical data to support the Advanced Medical Home data strategy. The NC HIEA will enroll 100 subscribers in NC*Notify, NC HealthConnex's event notification service, to push actionable data to providers participating in the Advanced Medical Home Tiers 3 and 4. Then, NC HIEA will add 750 more subscriptions.

Complete

Strategy: Fully integrate the Controlled Substance Reporting System (CSRS) with NC HealthConnex for the Strengthen Opioid Misuse Prevention (STOP) Act.

The NC HIEA will work with the N.C. Department of Health and Human Services Division of Mental Health and a health information vendor to develop a CSRS integration to NC HealthConnex by the second quarter of 2019 to help participants meet the STOP Act requirement that providers check the CSRS before prescribing a controlled substance.

Complete

GOAL 3
Improve the management and transparency of IT: Better utilize the state's IT resources and data, increasing visibility into what the state has, what it costs and how the state uses it.

Objective 3.1: Establish a new IT governance structure.

Strategy: Establish an IT Strategy Board.

NCDIT will establish an IT Strategy Board to advise the state chief information officer when setting the state's priorities and strategic direction for the use of information technology.

Complete

Strategy: Establish strategic priorities with the Digital Committee.

NCDIT will work with other state agencies and public entities to set the strategic direction and establish priorities to optimize citizen access to key state resources, services and information across multiple channels.

In progress

Strategy: Adopt a governance structure for ServiceNow.

The NCDIT Enterprise Strategy and Service Delivery divisions will work together to implement and fully adopt a governance structure for the ServiceNow platform.

In progress

Strategy: Continue implementation of enterprise data governance practices.

NCDIT will continue the implementation of its enterprise data governance plan, establishing data governance advisory groups and/or committees as well as formal policies and data sharing procedures..

In progress

Objective 3.2: Improve transparency of NCDIT finances.

Strategy: Implement a new funding model for IT based on Optimization.

NCDIT will propose a new funding model for IT in state government, which will be necessary as agencies with distinctly different IT funding models and sources transition to NCDIT. This model will be implemented concurrent with Phase II of Optimization.

In progress

Strategy: Implement a new billing system for NCDIT services.

NCDIT finance will work with other divisions of NCDIT to procure and implement a new billing system.

In progress

Objective 3.3: Simplify statewide IT procurement.

Strategy: Increase the number of categories covered and vendors included on convenience contracts.

Statewide IT Procurement will work with other divisions and other agencies to identify at least five categories of products and services (e.g., IT infrastructure or commercially off-the-shelf software) for inclusion on statewide convenience contracts based on historical purchases and demand for new products and services.

In progress

Strategy: Leverage the Innovation Center for more procurements.

Statewide IT Procurement will work with other divisions and other agencies to leverage the Innovation Center for at least 10 procurement efforts.

Canceled

Strategy: Create and encourage the use of a procurement vehicle that allows agencies to establish Statements of Work with prequalified vendors.

Statewide IT Procurement will establish a list of prequalified vendors and will work with a managed service provider to create and implement a procurement vehicle that allows agencies to use Statements of Work to leverage those vendors.

Complete

GOAL 4
Cultivate our IT workforce: Attract and develop a diverse, engaged community of IT professionals.

Objective 4.1: Provide training and career paths for optimized employees.

Strategy: Implement a strategic communications plan for the Optimization effort.

The Optimization team will work with other NCDIT divisions and agencies to document and implement a communications plan for the optimization effort, including a series of town hall meetings to engage current and future staff throughout the biennium.

Complete

Strategy: Catalog IT employee skill sets.

NCDIT will conduct a skills assessment for all optimized IT employees, with DEQ, DOA, DMVA, OSBM and OSHR. The skills assessment will be used to develop a skills catalog that will allow for more efficient use of human capital as agencies are optimized.

In progress

Strategy: Provide new training opportunities for IT employees.

NCDIT will provide new opportunities for skills training through a third-party training platform. As additional employees are optimized to NCDIT, they will also have access to the platform and the courses provided.

Complete

Objective 4.2: Streamline human resources processes.

Strategy: Implement a new on-boarding and off-boarding process.

NCDIT will work with the Office of State Human Resources to implement a new on-boarding and off-boarding process in at least four agencies.*

*The Office of State Human Resources changed the scope to include only NCDIT.

Canceled by sponsor

Strategy: Implement a new HR actions process for position, employee and leave of absence changes.

NCDIT will work with OSHR to implement HR actions (Position and Employee Changes including Leave of Absence process) in at least four agencies.

Canceled by sponsor

GOAL 5
Empower our citizens through technology: Provide transparent, easy-to-use and customer-focused government and student services.

Objective 5.1: Expand broadband across North Carolina.

Strategy: Establish a fund for activities that will help eliminate the homework gap.

The Broadband Infrastructure Office will work with multiple levels of government, nonprofit and corporate donors to identify and collect $5 million in philanthropic donations and appropriations as a starter fund for local government initiatives to eliminate the homework gap.

Complete

Strategy: Administer the Growing Rural Economies with Access to Technology (GREAT) Grant program.

The Broadband Infrastructure Office will work with local governments to administer the $10 million GREAT Grant program.

Complete

Strategy: Implement a "Dig Once" policy with the N.C. Department of Transportation.

The Broadband Infrastructure Office will work with the N.C. Department of Transportation to develop and implement a "Dig Once" policy. This policy will allow fiber optic/broadband cable to be laid at the time of road construction.

Complete

Objective 5.2: Enhance the customer and citizen digital experience.

Strategy: Create a digital strategy.

NCDIT will lead a cross-agency Digital Government Committee charged with prioritizing citizen-focused, digital services and solutions.

In progress

Strategy: Create a digital roadmap.

With the help of a third-party vendor, the Digital Government Committee will outline a roadmap — or set of prioritized recommendations — to support the implementation of the digital strategy. The roadmap may include new or refined technology solutions and platforms, standards, processes, cross-organizational collaboration requirements. This will include web tools and services that will enhance cybersecurity, improve the citizen experience and increase efficiency to quickly meet the needs of the business.

In progress

Strategy: Develop disaster response digital playbooks.

In response to Hurricane Florence and the threat of future natural disasters and emergencies, NCDIT will produce "digital playbooks" to enable rapid, effective solutions for citizens, the N.C. Department of Public Safety and other agency partners. These playbooks may include tools (e.g., data and mapping visualization solutions), allocation of web and digital staff and resources and refined change management processes to enable faster deployment of solutions.

In progress

Strategy: Leverage artificial intelligence for enhanced customer and citizen experiences.

NCDIT will implement chatbots and virtual assistants to streamline customer and citizen interactions with government services. NCDIT will have chatbots for frequently asked questions about NCDIT as well as general government.

In progress

GOAL 6
Modernize and centralize IT operations: Modernize and centralize technology operations to effectively support a 21st century government.

Objective 6.1: Optimization.

Strategy: Complete implementation of Phase I — transitioning people and budget.

NCDIT will complete the transfer of personnel and budgets for optimized agencies.

In progress

Strategy: Transition optimized agencies to managed services, starting with database administrators from the Office of State Budget Management as well as DBAs and desktop services from the N.C. Department of Environmental Quality.

Phase II of Optimization involves moving agencies onto shared services. A shared services approach will allow the state to provide consistent IT services to agencies and gain economies of scale. DEQ and OSBM will be fully transitioned to managed services.

In progress

Objective 6.2: Migrate as much as possible to the cloud.

Strategy: Provide Integration Platform as a Service.

NCDIT will implement Integration Platform as a Service (IPaaS) to enable the integration between any combination of applications — public, commercially off-the-shelf proprietary, hosted on-premise, hosted in the public cloud or hosted in a private cloud. The service will support all integration needs — real-time, batch integration, event-based and asynchronous integration. NCDIT is targeting the transition of 50% of agency applications from other cloud environments.

Complete

Strategy: Implement a new telephony platform for the state.

NCDIT will complete its implementation of a new VoIP telephony platform, moving state agencies and other NCDIT customers off legacy technology.

In progress

Strategy: Implement four modules of ServiceNow.

NCDIT will implement at least four modules of ServiceNow, beginning with human resources, IT service management and IT asset management.

In progress

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