

# Annual Report

N.C. Department of  
Information Technology



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# Secretary's Message

The N.C. Department of Information Technology adopted a new strategic plan for fiscal years 2021-23. This plan outlines our five key goals we are working toward to carry out our mission to enable trusted business-driven solutions that meet the needs of North Carolinians.



NCDIT Secretary and State Chief Information Officer Jim Weaver

I am proud of the dedication, adaptation and resilience the NCDIT team has demonstrated over the past year as we have progressed in executing this plan. As we have come out of the COVID-19 pandemic and the related recovery efforts, we have learned lessons proving that our department has adopted the right priorities to meet changing needs and demands: broadband and connectivity, cybersecurity and privacy, and digital transformation.

For work, education and play, the people and businesses of North Carolina need to be able to access, afford and use high-speed internet service. Our Division of Broadband and Digital Equity is working to not only expand broadband infrastructure but also serve as a statewide resource for digital inclusion and literacy initiatives to close the digital divide.

It is equally important that North Carolinians can safely take advantage of digital opportunities while knowing their data is secure. NCDIT has continued to work closely with local, state and federal partners in cybersecurity for critical IT networks and infrastructure, while our first chief privacy officer has developed a strategic statewide privacy program to ensure privacy and protect the data entrusted to state government.

North Carolina people, businesses and visitors also expect to be able to access government services seamlessly – from anywhere, at any time and from any device. Our department is leading the development and adoption of one-stop shop websites for state agencies, enabling users to easily find the essential services they need.

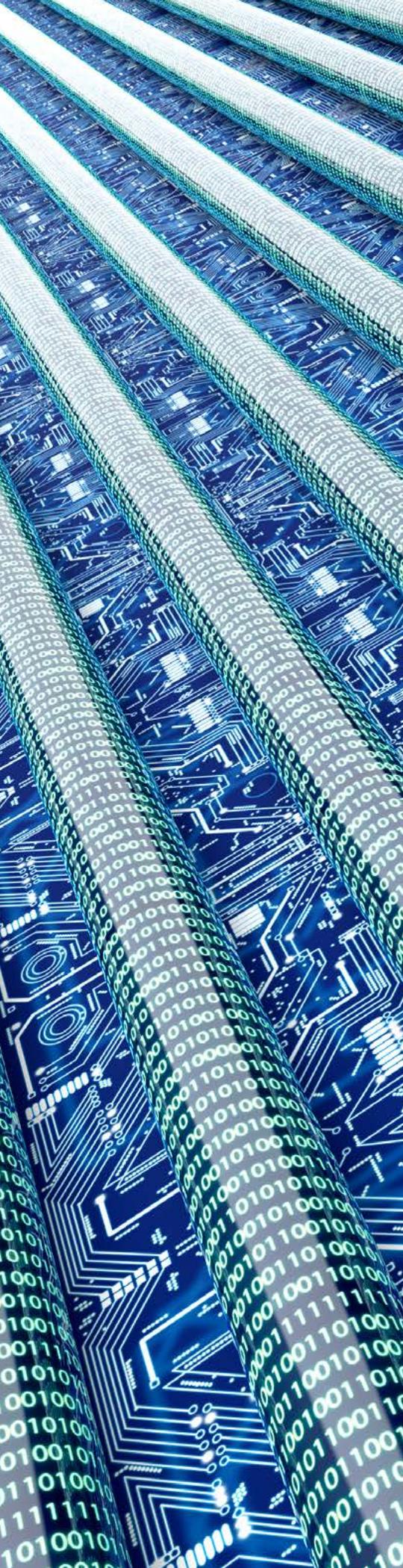
This annual report shares with you an overview of our work in fiscal year 2021-22. I hope that by reading the report, you learn more about NCDIT and our skilled and committed employees who have led North Carolina to state and national recognition for innovation and resilience.

I look forward to seeing the accomplishments we make in 2023 as we continue to carry out our strategic plan.

A handwritten signature in black ink that reads "James A. Weaver". The signature is fluid and cursive, with a large loop at the beginning.

Jim Weaver  
Secretary and State Chief Information Officer





# About NCDIT

The N.C. Department of Information Technology oversees IT services for the state of North Carolina and is the primary IT service provider for state government agencies. It also provides services for local governments and educational institutions.

The department was established as a cabinet-level agency in 2015 to consolidate and optimize enterprise IT functions within the executive branch to meet the needs of residents, businesses and visitors while also realizing efficiencies and cost savings through economies of scale. The governor appoints the state chief information officer, also referred to as the secretary of the department.

The department's primary functions are statewide strategy, governance, architecture and operations. Key responsibilities of the state CIO include:

- Ensure the security of state information technology systems and networks, as well as associated data, developing standardized systems and processes.
- Developing and administering a comprehensive long-range plan to ensure the proper management of the state's information technology resources.
- Set technical standards for information technology, review and approve information technology projects and budgets, establish information technology security standards, provide for the procurement of information technology resources, and develop a schedule for the replacement or modification of information technology systems.

A full list of the powers and duties of the department can be found in [N.C.G.S. 143B, Article 15](#).

**NCDIT's 1,300 employees are dedicated to providing business-driven solutions that meet the needs of North Carolinians while effectively managing risks and security.**

## OUR GUIDING PRINCIPLES



Collaboration



Innovation and Creativity



Transparency



Accountability



Agility



Integrity



Customer Focus

# Vision, Mission and Priorities

## OUR VISION

Government that strategically leverages technology for an equitable, prosperous, healthier and educated North Carolina.

## OUR MISSION

Enable trusted, business-driven solutions that meet the needs of North Carolinians.

## OUR PRIORITIES

- Broadband and connectivity
- Cybersecurity and privacy
- Digital transformation

# Enterprise Functions and Divisions

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

The department's major functions and offices are:

- Architecture and Design
- Broadband and Digital Equity
- Cybersecurity and Risk Management
- Data
- Operations and Engineering
- Privacy and Data Protection
- Statewide IT Procurement
- Strategy and Governance

## CONSOLIDATED AGENCIES

As directed in general statute, NCDIT is working to consolidate IT functions of executive agencies under the department. This allows agency IT divisions to better leverage resources and knowledge among other agencies for better solution outcomes and to ultimately reduce costs.

To date, the following agencies' IT operations have been consolidated:

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

## ARCHITECTURE AND DESIGN

NCDIT ensures that solutions – either to be built or procured – align with the goals of the state as well as agencies to support digital transformation, IT growth and modernization. The department works to proactively identify and implement new solutions based on identified gaps to reduce redundancy of solutions, optimize costs and mitigate risks. In addition, NCDIT works with agencies to apply existing, new and emerging technologies to transform and optimize business and operating models, helping agencies plan, design, innovate, orchestrate, facilitate, navigate and operationalize the digital enterprise.



## BROADBAND AND DIGITAL EQUITY

The NCDIT Division of Broadband and Digital Equity, comprised of the Broadband Infrastructure Office and the Office of Digital Equity and Literacy, leads the state's efforts for high-speed internet infrastructure expansion, digital equity and inclusion initiatives and first-responder communications.

The division administers the state-funded Growing Rural Economies with Access to Technology grant program, as well as other state and federal funding programs for broadband infrastructure and digital equity. In addition, the division facilitates partnerships with broadband providers and stakeholders across the state, gathers data to identify unserved and underserved areas and provides policy, technical guidance and digital inclusion and literacy resources to local and state leaders to extend high-speed internet connectivity across the state.

## CYBERSECURITY AND RISK MANAGEMENT

NCDIT 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.

The department works with the N.C. Department of Public Safety and the N.C. Joint Cybersecurity Task Force to manage statewide response to significant cybersecurity incidents. It also helps executive branch agencies comply with legal and regulatory requirements as well as technical architecture and industry best practices.

Under the state's chief privacy officer, NCDIT provides a strategic statewide program that implements consistent information-privacy practices and manages risk related to the collection, use, sharing and maintaining of personally identifiable information. By integrating privacy into existing policies and processes and utilizing privacy points of contact at executive agencies, NCDIT is increasing privacy awareness and maturing the state's privacy program.

## DATA

NCDIT provides the infrastructure to host state projects, services, data and applications. The department also manages and coordinates enterprise data integration efforts through the [Government Data Analytics Center \(GDAC\)](#). Currently, 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.



## OPERATIONS AND ENGINEERING

With a few legislative exceptions, NCDIT provides all IT support for consolidated agencies. The department partners with other state agencies, local governments and educational entities to provide reliable, cost-effective services that meet current and future requirements, service levels and budgets.

NCDIT also centralizes partners' services, as necessary, for ease of use, security, optimal cost and efficiencies.

## PRIVACY AND DATA PROTECTION

Under the state's chief privacy officer, NCDIT provides a strategic statewide program that implements consistent information-privacy practices and manages risk related to the collection, use, sharing and maintaining of personally identifiable information. By integrating privacy into existing policies and processes and utilizing privacy points of contact at executive agencies, NCDIT is increasing privacy awareness and maturing the state's privacy program

## STATEWIDE IT PROCUREMENT

NCDIT is responsible for procuring IT goods and services for agencies whose IT resources have been consolidated. It is also responsible for approving IT procurements for other agencies to ensure they meet current technology standards, are not duplicative, meet business objectives, are cost effective and are adequately funded. The department establishes processes, specifications and standards for IT products and services that are purchased, licensed or leased by state agencies and educational entities.

## STRATEGY AND GOVERNANCE

NCDIT is responsible for working with state agencies to develop and administer a comprehensive strategic plan to ensure the proper management of the state's information technology resources. This plan is used to create and maintain a strategically aligned portfolio of IT services and solutions that meets the state's business needs and effectively leverages state resources to service residents, businesses and visitors.

The department is also responsible for establishing a consistent process for planning, maintaining and acquiring the state's IT resources as well as ensuring that state programs and projects align with policies, standards and architecture.

## FEATURE ARTICLE

# Cybersecurity as a Combined Effort

For years, the N.C. Department of Information Technology, alongside a host of other partners, has quietly been working to ready state and local governments for cyberthreats.

Governments are prime targets for bad actors, who are continually evolving their skillsets and making their attack tactics increasingly sophisticated. It is not a question of if but when they will become susceptible to an incident.

This is why Gov. Roy Cooper, in March 2022, issued [Executive Order 254](#) formalizing the N.C. Joint Cybersecurity Task Force – a collaborative of NCDIT, the N.C. National Guard, N.C. Emergency Management and the North Carolina Local Government Information Systems Association’s IT Strike Team.

Along with other local, state and federal agencies, the team of experts provides technical guidance and support, when requested, to government and educational entities faced with cyberthreats.

Gov. Cooper’s intent is to increase the Task Force’s visibility among not only local governments but also critical infrastructure and key resource partners – such as hospitals, airports and utilities. The executive order encourages them to work with the task force to coordinate effective cyber defensive efforts that can help limit the impacts of a cybersecurity incident.

“These measures allow NCDIT and the Task Force to have a better understanding of the threat landscape in the state,” says Rob Main, North Carolina’s chief risk officer. “A more realistic picture helps us better protect and defend our IT networks and critical infrastructure.”

Another goal of Executive Order 254 is to increase communication and build trust and relationships among entities.

“When you are dealing with a significant cyber incident, you do not want to be meeting for the first time the people who will be working alongside of you,” says Lt. Col. Robert Felicio, the N.C. National Guard’s chief information officer and a member of the Task Force. “You want to have met with them, talked with them, know them. Relationships are incredibly important.”

Cybersecurity is a combined effort, Main adds.

“No one entity can go at it alone,” he says. “We cannot underestimate the value of information sharing, collaboration and interpersonal relationships. They are critical in preventing and responding to cyber threats.”



North Carolina Chief Risk Officer  
Rob Main



# Boards and Commissions

By statute, the state CIO is represented on the following boards and commissions:

- [Information Technology Strategy Board](#)
- [N.C. 911 Board](#)
- [N.C. Geographic Information Coordinating Council](#)
- [N.C. Health Information Exchange Authority Advisory Board](#)
- [N.C. Longitudinal Data System Governance Board](#)

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## INFORMATION TECHNOLOGY STRATEGY BOARD

The Information Technology Strategy Board plays a critical role in defining and planning North Carolina's enterprise technology projects. It also advises how to prioritize those and identifies areas where funding adjustments might be needed. In addition, the board uses industry best practices to guide the Statewide IT Strategic Plan.

The state chief information officer serves as the chair of this 12-person board, which also includes 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. It 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 N.C. General Assembly.



## N.C. 911 BOARD

The N.C. General Assembly created the N.C. 911 Board to consolidate the state's enhanced 911 system under a single board with a uniform service charge. The board is working to create an enhanced statewide 911 system for wireless and landline callers. The board aims to integrate the state's 911 system to increase efficiencies and equally connect to voice communication technologies.

The board sets a uniform 911 service charge (most recently raised by 5 cents to 65 cents in 2018) collected by all telephone and voice communication providers. Revenue from the service charge goes into the 911 Fund, from which the board manages and distributes funds.

The 17-member board plays an integral role in ensuring adequate funding to maintain and expand 911 capabilities across the state. The state chief information officer (or the CIO's designee) serves as chair. Eight members represent vendors, including three commercial mobile radio service providers, four local exchange carriers and one voice over internet protocol provider. Eight members are local officials representing:

- North Carolina League of Municipalities
- North Carolina Association of County Commissioners
- Sheriff's offices and police departments
- N.C. Association of Public Safety Communication Officials
- National Emergency Number Association
- North Carolina Firemen's Association
- North Carolina Association of Rescue and Emergency Medical Services.

## N.C. GEOGRAPHIC INFORMATION COORDINATING COUNCIL

The N.C. Geographic Information Coordinating Council develops policies regarding geographic information, geographic information systems and related technologies. It also advises the governor and the N.C. General Assembly on responsibilities and funding for geographic information management and use.

The council consists of volunteers from the public and private sector who:

- Collaborate in geographic information and systems with state, federal and local government agencies as well as academic institutions, private organizations and individuals
- Improve the quality, access, cost and use of geographic information and resources
- Promote geographic information as a strategic resource
- Efficiently collect, develop and use geographic information through the voluntary exchange and sharing of data and technical know-how
- Provide a framework for developing standards, strategic planning, resolving policy and technical issues as well as providing central direction and oversight

## N.C. HEALTH INFORMATION EXCHANGE AUTHORITY ADVISORY BOARD

The legislatively appointed 11-member advisory board consults the N.C. Health Information Exchange Authority on the advancement and operation of NC HealthConnex, the state's designated health information exchange.

The secretaries for NCDIT and the N.C. Department of Health and Human Services – as well as the directors of NCDIT's Government Data Analytics Center and the State Health Plan – serve as ex-officio members of the advisory board. Additional membership is comprised of representatives from the health care community and the State Health Plan.

## N.C. LONGITUDINAL DATA SYSTEM GOVERNANCE BOARD

Established by [Executive Order 249](#), issued by Gov. Roy Cooper in February 2022, the governance board supports the work of the North Carolina Longitudinal Data System. NCLDS coordinates access to cross-sector, longitudinal and linked record-level data that helps data contributors, practitioners and trusted research partners address the state's most pressing questions via data-informed decision-making, continuous improvement and performance management processes.

The board provides guidance and advice to the N.C. Government Data Analytics Center on:

- Establishing a policy and research agenda for NCLDS
- Developing data governance, data security and data privacy policies for NCLDS
- Approving new data partners for NCLDS and ensuring coordination among agencies and NCLDS
- Reviewing research requirements, protocols and guidelines regarding the approval of data requests
- Supporting NCLDS goals and priorities
- Phasing in the recommendations of the NCLDS interoperability and modernization study

In addition to non-voting members from NCDIT and the Governor's Office, the board members are senior leaders from each entity that contributes data to NCLDS:

- N.C. Department of Health and Human Services
- N.C. Department of Public Instruction
- N.C. Community College System
- University of North Carolina System
- N.C. Department of Commerce
- N.C. Independent Colleges and Universities

The board's work is supported by two committees on data quality and data governance.

## FEATURE ARTICLE

# Prioritizing Privacy and Data Protection

Spend any amount of time with Cherie Givens, and it becomes apparent where her passion lies.

“I am a complete privacy geek,” Givens says. “I teach about privacy. I write about privacy. In my off time, I’m reading about it and thinking about it.”

So, it is fitting that the Louisiana native – with more than a decade of experience supporting federal privacy programs – joined the N.C. Department of Information Technology in December 2021 as the state’s first chief privacy officer.

Tasked with managing risks related to information privacy laws and compliance regulations, Givens is focused on creating a robust and dedicated privacy and data protection program to bolster existing state efforts to protect the sensitive information of North Carolina residents, businesses and visitors.

Think of it as building a culture of privacy across all state agencies that encompasses privacy awareness, training, policies, processes and technical controls.

“My job is to mature the state’s privacy program and help agencies understand and comply with state and federal privacy laws, policies and processes,” Givens says.

Concern for privacy has always been a priority for the NCDIT. The department’s Enterprise Security and Risk Management Office, which leads the state’s cybersecurity efforts, is also focused on data protection.

But Givens explains that there is a distinct difference between cybersecurity and privacy.



NCDIT Chief Privacy Officer Cherie Givens speaks in April 2022 at a gathering of government vendors hosted by NC TECH Association.

“They go hand in hand but are not the same,” she adds. “Privacy is user-focused and is about the user’s right to keep information private and protected from those not authorized to access it. Cybersecurity is business-focused, concerned with protecting systems, applications and data from vulnerabilities or attacks.”

With Givens at the helm of the state’s privacy efforts, North Carolina joins the ranks of 22 other states, including Maryland, Ohio, Tennessee and Washington, with privacy officers and efforts underway or ongoing to create dedicated privacy programs – programs that cannot come at a more crucial time.

According to a 2022 report from IBM, the cost of technology breaches in the United States involving personally identifiable information continues to rise.

Givens says these events can also diminish user confidence and make them less likely to share personal information, which can have an impact on state services and studies that drive decision-making.

“People provide the state with personal information with the expectation that we will keep it private and not share it beyond what is agreed upon,” she says. “That is why we must also think about privacy not just from a legal standpoint but consider the ethical and operational aspects as well – to earn and keep the trust of the people we serve.”

# Budget Report

FY 2021/2022 | BUDGET EXPENDITURES

NCDIT's **\$1.63 billion** budget supports specific programs and activities across multiple divisions.

## Cybersecurity Response and Risk Management

1%

## IT Projects and Strategic Services

1%

## Agency Administration and Statewide IT Procurement

2%

## Government Data Analytics

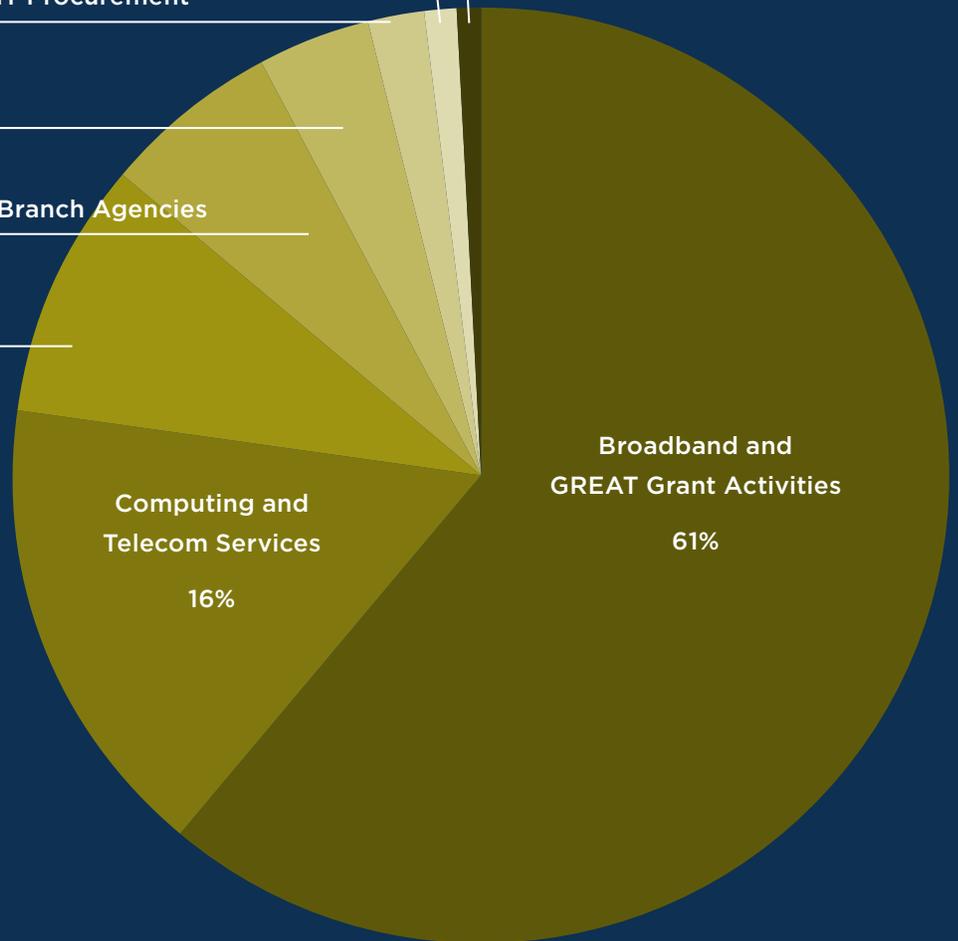
4%

## IT Staffing for Consolidated Executive Branch Agencies

6%

## Support of 911 Communications

9%



## FY 2021/2022 | BUDGET FUNDING SOURCES

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

### Interest

<1%

### Grants

1%

### Fees for Services

1%

### Equity/Fund Balance Utilization

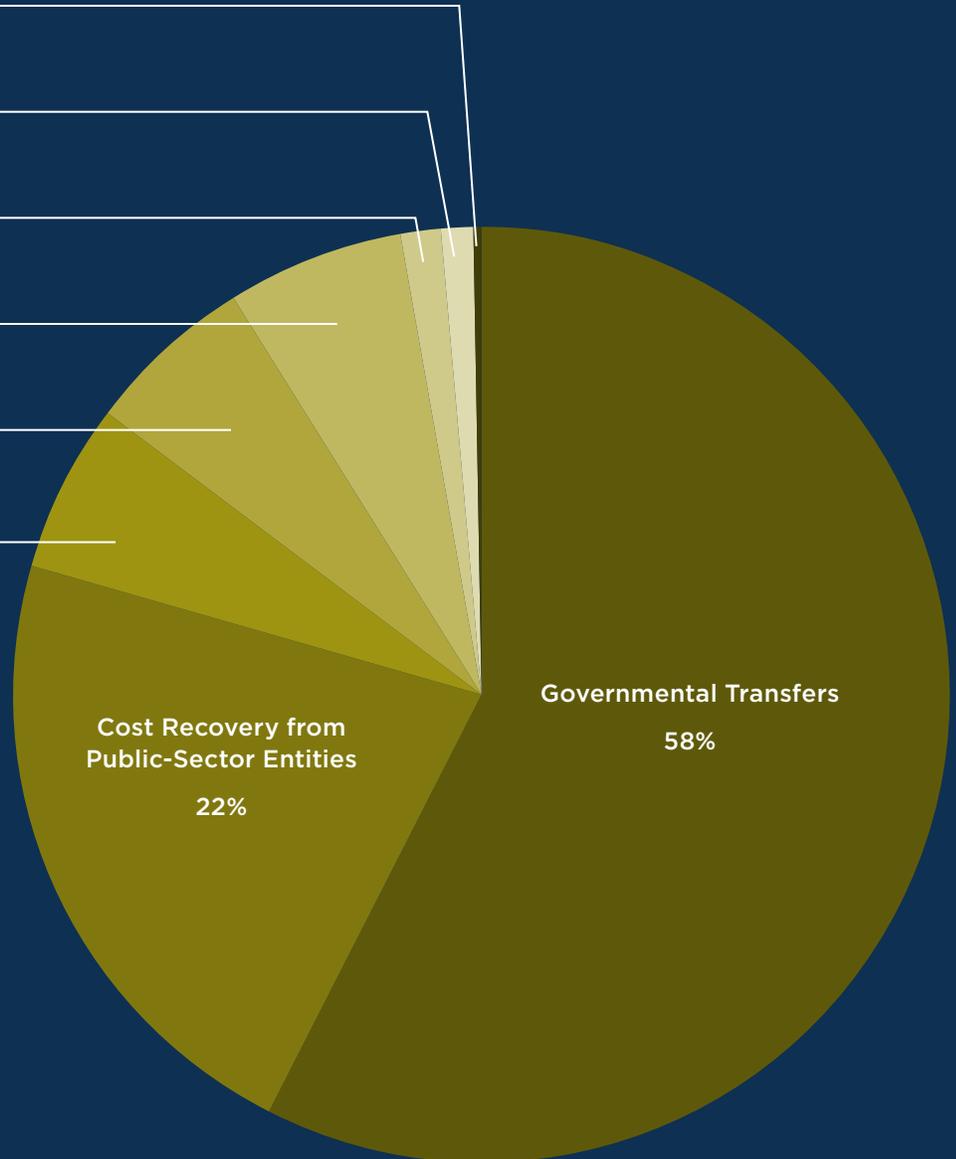
6%

### Direct General Fund Appropriations

6%

### 911 Fees from Telecom Vendors

6%





# Goals

## Foster a connected North Carolina to improve opportunities and outcomes for all North Carolinians.



- Expand broadband and digital inclusion.
- Work with our partners in the private, not-for-profit and public sectors to expand broadband and increase digital equity.
- Enhance the customer and citizen digital experience.
- Enhance 911 capabilities across the state.
- Increase collaboration among state and local entities.

## Transform the delivery of services.



- Enhance the NCDIT customer experience.
- Develop scalable services that meet the current and emerging needs of our customers.
- Establish service broker model and supporting capabilities.
- Enable a cloud migration strategy.
- Simplify statewide IT procurement.
- Improve the ability to forecast customer needs.
- Transition to modern authentication services to support the state's current and future needs.
- Invest in secure, scalable infrastructure for data programs.
- Develop and implement a new funding model for IT in the state.



## Optimize and secure the state's IT and application portfolios.

- Implement a whole-of-state approach to cyber and risk management.
- Integrate and operationalize cybersecurity tools across all state agencies.
- Continue to optimize IT across cabinet agencies.
- Leverage the Enterprise Portfolio Management Tool to identify critical applications and technology convergence opportunities.
- Implement enterprise IT governance to optimize IT investments.
- Develop an application modernization program.



## Promote an inclusive and innovative workforce.

- Attract, develop and retain a skilled and diverse workforce.
- Establish a culture of empowerment and collaborative thinking.
- Invest in people through increased training and education opportunities.
- Develop and implement advancement opportunities for our employees.
- Improve communication and transparency with employees.
- Foster an environment that promotes diversity, equity and inclusion.



## Leverage data assets and analytics to further advance a data-driven government.

- Provide data analytics and insights for more informed decision-making.
- Execute enterprise data governance strategies to promote data sharing while ensuring data privacy and security.
- Inventory critical data assets across the enterprise.
- Implement an enterprise data management program that addresses data standards, quality and accessibility.
- Expand the use of modern data visualization capabilities to track performance and impacts.



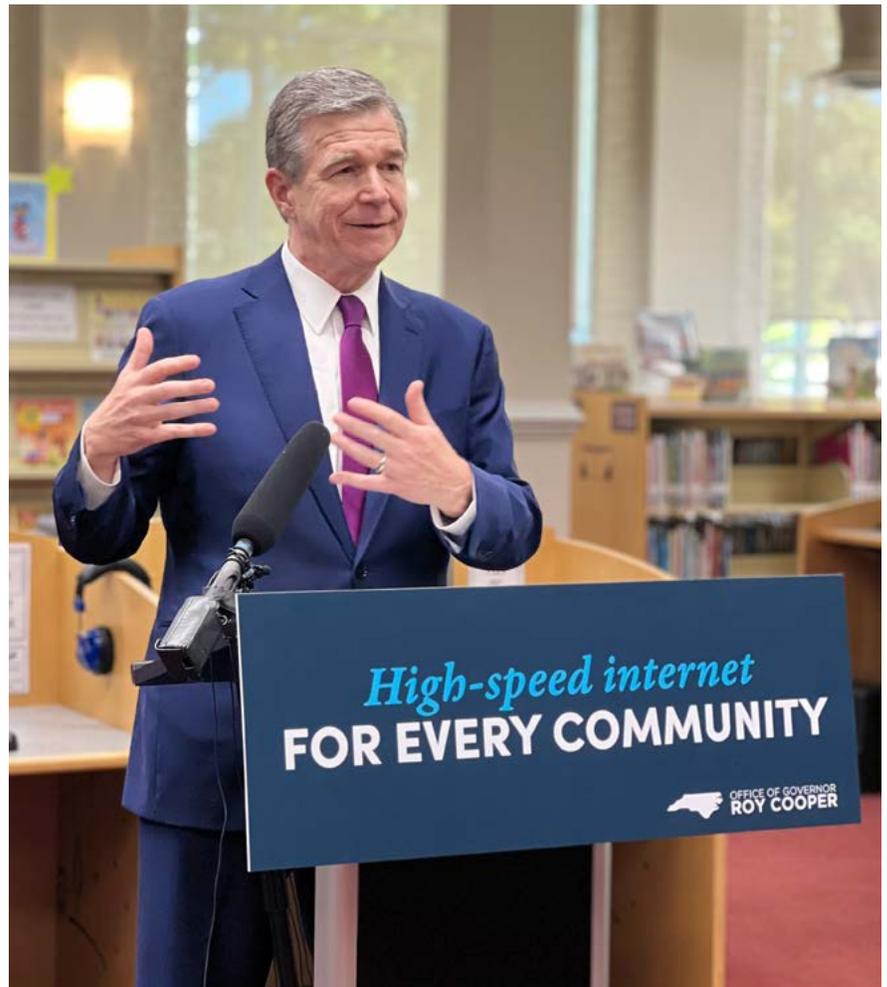
## Foster a connected North Carolina to improve opportunities and outcomes for all North Carolinians.

NCDIT aims to equip all the people of North Carolina to take advantage of the digital world and the opportunities it offers for work, education, business, health and recreation. The agency has established new programs to promote broadband infrastructure and access as well as digital inclusion and equity. In collaboration with partners across state government, the agency has innovated smoother, more efficient digital ways for North Carolinians to access and use the government services they need.

### BROADBAND AND DIGITAL INCLUSION

Providing affordable, high-speed internet access for all North Carolinians remains a top priority for both NCDIT and Gov. Roy Cooper, as broadband now touches most aspects of everyday life. The department is working to ensure that residents have access to the necessary infrastructure, have the technical skills needed to participate in today's digital economy and are aware of federal programs that help with broadband service affordability.

NCDIT is dedicated to advancing this important initiative, so businesses and residents across the state, in both rural and urban communities, can take advantage of online work, education and telehealth opportunities that can enhance their lives while also growing the state's workforce and economy.



Gov. Roy Cooper announces GREAT Grant awards to expand broadband infrastructure on Aug. 31, 2022.

## BROADBAND BY THE NUMBERS

**1M+**

Residents who lack access to high-speed connection, cannot afford the internet, do not have a digital device, or do not have necessary digital literacy skills.

**\$272M+**

GREAT grant awards to expand high-speed internet access to **109,988 households** and **3,626 businesses** in 93 North Carolina counties.

**\$50M+**

Previous state-funded GREAT Grant projects, with \$36 million underway.

**85,392**

Responses to broadband survey, including 4,450 reporting no internet at all.

**494,798**

North Carolina households enrolled in the Affordable Connectivity Program.



Nate Denny, deputy secretary for Broadband and Digital Equity, Annette Taylor, director of the Office of Digital Equity and Literacy, Gov. Roy Cooper and Angie Bailey, director of the Broadband Infrastructure Office, announce GREAT Grant awards in August 2022.

### Infrastructure

To expand high-speed internet infrastructure to homes and businesses across the state, NCDIT launched on Jan. 31, 2022, the 2022 round of Growing Rural Economies with Access to Technology grants with \$350 million from the federal American Rescue Plan Act. More than \$270 million was awarded to connect more than 109,000 households and 3,600 businesses in 93 North Carolina counties. The awarding of grants was continuing until all appropriated funds were distributed. More than 25% of the more than \$1 billion in state and federal funds appropriated in the state budget ([Session Law 2021-180](#)) have now been awarded.

Partnerships with other agencies also provided opportunities to expand broadband infrastructure:

- Continued work with the N.C. Community College System, Friday Institute and MCNC on the cabling component of the Community College Rural Broadband Initiative, which includes 25 colleges. The colleges were grouped into cohorts, and site surveys were underway for the initial cohorts to solidify project funding and scheduling. The cabling work was estimated to use \$5 million of the initiative's approved budget of \$15 million.
- Installation of broadband fiber along Interstate 95, including the setup and installation of a new circuit in Selma and installation of hub cabinets and fiber along Interstate 95 from Selma to the Virginia state line.
- Work on the State Metropolitan Area Network serving the Raleigh-area state government complex, including completion of micro-trenching of the core fiber ring and installation of fiber between the new core locations, along with roadwork and engineering work.

## Digital Equity & Inclusion

Closing the digital divide, which impacts more than 1 million North Carolinians, remains a top priority of Gov. Roy Cooper's administration. Throughout the past year, NCDIT increased its efforts to expand access to affordable, high-speed internet across the state and help ensure residents have the digital skills, tools and financial ability to equitably participate in an increasingly digital world.

- The department began carrying out a comprehensive outreach plan to make low-income households, local organizations, nonprofits and state agencies aware of the Affordable Connectivity Program. The federal program offers eligible households monthly discounts of \$30 or more on high-speed internet service. Program participants increased by 395% in fiscal year 2022 (from nearly 100,000 to nearly 495,000).
- NCDIT submitted applications for two National Telecommunications and Information Administration programs to fund high-speed internet infrastructure deployments and digital equity projects in North Carolina. The two programs are the Broadband Equity, Access and Deployment (BEAD) Program and the State Digital Equity Planning Grant Program.
- NCDIT participated in more than 100 events and public meetings in 2022 to share details of the implementation of Gov. Cooper's plan to close the digital divide. The Division of Broadband and Digital Equity engaged with local governments, organizations and members of the public in the broadband and digital equity program planning and progress.
- As part of a plan to close digital skills gaps in North Carolina, NCDIT submitted final state policy recommendations to the National Governor's Association on Aug. 31, 2022 as part of the Workforce Innovation Grant. The recommendations included creating and filling a position for a statewide digital navigator, who will support other digital navigator programs across the state that help community members access and use digital resources, and launching an online repository of digital literacy resources.
- NCDIT partnered with the Friday Institute for Educational Innovation at N.C. State University to collect more than 85,000 responses to the North Carolina Broadband Survey. The survey focuses on household and business internet service availability and speed test data. The collected data provides a better picture of each community's unique challenges and needs for digital equity and helps creating better maps of unserved and underserved locations.



Nate Denny, deputy secretary for Broadband and Digital Equity, speaks at a ribbon-cutting ceremony in La Grange for a FirstNet cell site tower, which will bring reliable broadband services to first responders, residents and businesses.

## CUSTOMER AND CITIZEN DIGITAL EXPERIENCE

NCDIT's Digital Solutions team completed a 2.5-year migration of more than 70 sites to a new custom-built upgrade of the Digital Commons platform, the open-source content management system built for state government agencies. The platform enables state government agencies to deliver services, resources and information to key audiences in a more efficient and accessible manner across their websites. The team also built NC.gov as a constituent portal that transforms how users can access all state services.

## ENHANCE PUBLIC SAFETY

### 911 Capabilities

To create a safer North Carolina where residents and businesses can prosper, the N.C. 911 Board supported the development and enhancement of the statewide 911 system and its workforce.

A statewide migration effort brought 124 public safety answering points (commonly referred to as 911 call centers) and 190 physical locations, including backup facilities, onto ESInet, the Emergency Services IP Network supporting Next Generation 911. Three PSAPs were preparing for migration by early 2022. As a result, 99 percent (10,77,959) of the state's population and 47,329 square miles (78 %) of the state's land area are now served by PSAPs connected to Next Generation 911.

All 100 counties engaged in the Next Generation 911 GIS initiative and began uploading data to the GIS repository to accurately identify 911 callers' location and route them to the appropriate PSAP. Of the 124 PSAPs on ESInet, 100 meet national standards for GIS call routing. A dashboard was built to track and monitor the status of GIS data to identify jurisdictions that may not be uploading data in a timely manner.

The Network Monitoring and Assistance Center became fully operational (24/7) and reached its full planned staffing levels, so it can monitor service and performance on North Carolina's Next Generation 911 system and provide support to PSAPs as needed to ensure an uninterrupted flow of communication.

The N.C. 911 Board awarded \$13.67 million in grants to nine PSAPs to support enhancements to 911 centers and equipment, such as computer-aided dispatch, radio and ancillary equipment upgrades and new facilities. The state's first Priority One Collaboration Grant provided \$2.7 million to enable consolidation by Watauga County Communications and Boone Police Department Emergency Communications.



N.C. 911 Board staff visit with PSAP staff in Pender and Onslow counties in July 2022.

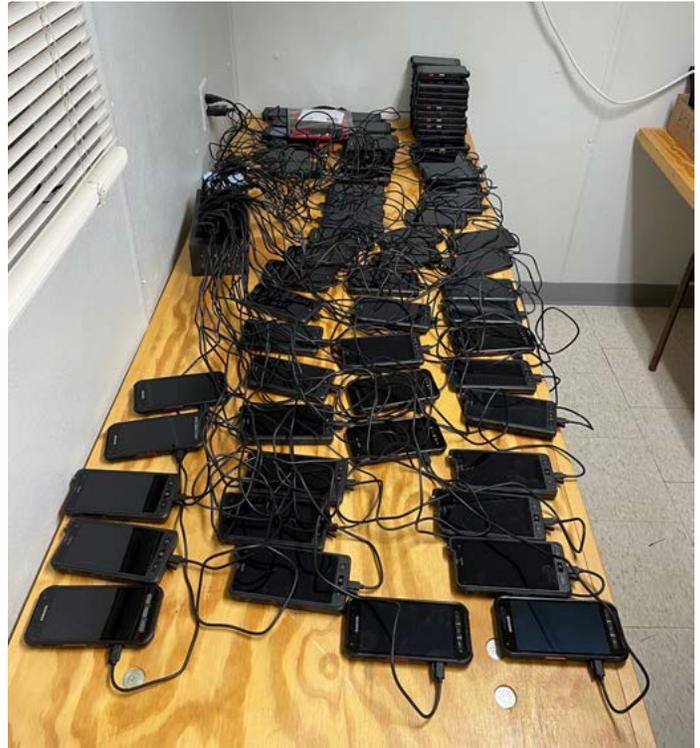
A public service announcement, made in partnership with Spectrum/Charter, and a webpage were created for non-traditional media outreach to assist with the recruitment of 911 telecommunicators. PSAP data confirmed an increase in applications for telecommunicator positions during a pilot in the Durham market, spurring planning for a statewide media campaign.

A session initiation protocol (SIP) admin pilot project was launched with five PSAPs to prove the viability of the replacement of analog/copper wire phone lines with an IP phone network in PSAPs. SIP trunking allows a PSAP to move 911 calls to an alternate physical location, saving costs and supporting PSAPs' continuity planning.

## Emerging Technologies

The First Responder Emerging Technologies (FirstTech) team helped the U.S. Department of Homeland Security Science and Technology Directorate and its National Urban Security Technology Laboratory evaluate the following technologies that will help companies further develop their offerings for public safety needs:

- A situational awareness software platform that shares more information to field units so they can make better data-driven decisions
- A portable, self-contained cellular system that allows response agencies to maintain connectivity in congested urban areas or remote rural areas
- A mesh radio system that can be used to extend network coverage in hard-to-reach areas like a subway tunnel, parking garage or high-rise building



FirstTech innovates new technology for public safety responders.



# Transform the delivery of services.

Modern state government requires that those working, living and learning in North Carolina can access the services they need anywhere, at any time and on any device. NCDIT enhanced the customer experience for services and procurement from the department and partner state agencies while meeting their current and emerging needs in a secure environment.

## ENHANCE THE CUSTOMER EXPERIENCE

NCDIT aimed to provide solutions and infrastructure to facilitate efficient and seamless communication with the people of North Carolina for all agencies to achieve their missions.

- Designed a new theme to provide a more modern user-focused experience for all state websites. NCDIT first deployed the theme on NC.gov and then began applying it to other websites on the Digital Commons platform later in 2022. The design takes a responsive approach to ensure content is easily viewed on any device. Responsive design by default, fast-loading and accessible, the theme provides a similar experience on every device and improved accessibility for people with visual and mobile disabilities.
- Upgraded the state's data centers with newer fiber infrastructure, improving the operational time to provide cabling services to clients.
- Onboarded 10,000 users to NCDIT's new Internet Protocol telephony service offering, which has multiple communication methods and features that increase user capability and productivity and enhance operating efficiency. Users included new customers and customers on the department's legacy IP telephony service.
- Designed and deployed an enterprise Wide Area Network (WAN) for computers and next-generation IP telephony services for the new Steve Troxler Agricultural Sciences Center, which better equips this laboratory to perform testing and other services for the N.C. Department of Agriculture and Consumer Services.

- Brought to market the next-generation enterprise Hosted Cloud Contact Center service to enable agencies to deliver a better customer experience. NCDIT onboarded its own service desk as the initial customer in July 2022. Features include skills-based omnichannel routing of voice, email and webchat, virtual hold, interactive voice response with advanced speech recognition, computer telephony integration and workforce optimization. Agency contact centers can be transformed into a powerful tool to optimize operations, support employee engagement and improve the citizen experience.

## MODERN AUTHENTICATION SERVICES

Identity management for the people who work with and do business with the state of North Carolina is an important part of NCDIT's efforts to protect and secure IT systems and data. It ensures that only the people authorized to access systems and data can do so.

Through the Citizen Identity Project, NCDIT updated the N.C. Identity Management service, commonly referred to as NCID, to enhance security, improve self-service and move onto a modern, cloud-based service. The NCID team built a development environment and worked with agencies' application owners for the initial testing of applications with the modernized NCID.

NCDIT supported the N.C. Office of the State Controller's roll-out of multifactor authentication (MFA) for all users of the state's Integrated HR-Payroll System to enhance secure access. NCDIT also rolled out MFA for all users in state and local government on the department's Microsoft 365 tenant.



## CUSTOMER EXPERIENCE FOR OTHER AGENCIES

NCDIT developed and enhanced solutions for state agencies to deliver a successful customer experience for end users ranging from probation officers and incarcerated persons to driver's license holders and procurement officers.

### Public Safety

- Implemented a new dental record system for the N.C. Department of Public Safety to provide the most up-to-date treatment plans for the offender population. The MiPACS Dental Enterprise Viewer marked a vast improvement, enabling NCDPS dental staff to better capture and view dental images from any capture device while maintaining compatibility with industry standards.
- Deployed a built-in voice-to-text solution in existing applications for probation officers to promote officer safety and data accuracy.
- Created and implemented an app within NC-JOIN – the youth offender case management system for the N.C. Office of Juvenile Justice and Delinquency Prevention – to enable the use of tablets to track the status of youth offenders in all state facilities. This allows for more accurate screening and tracking of youthful offenders to ensure the safety of everyone within the facilities.
- Modernized NCDPS's offender management system, which was a 30-year-old mainframe application. The modernization provides high system availability, load balancing workloads, cost savings and disaster recovery.
- Replaced NCDPS's 20-year-old in-house system that tracked purchasing and inventory with a new business resource planning system eliminating all manual and paper processes. This modern managed solution tracks inventory and product builds, manages purchasing and provides a visual dashboard for all business processes. It has improved overall internal and external customer service by adding visualization to formerly paper-based, manual processes.

- Implemented a facial recognition solution for the Special Operations Investigative Unit to automate matching photographs with current or former offenders in NCDPS' database in response to requests from law enforcement, the Federal Bureau of Investigation and other government entities.
- Deployed secure, one-way (dial-in services) phone services in NCDPS facilities via an internal voice over Internet Protocol solution. This reduced travel times to prison facilities, improved inmate-attorney services and increased efficiencies for NCDPS legal staff.
- Expanded utilization of NCDIT's upgraded telepresence solution across NCDPS, enabling more efficient internal and external collaboration. The solution includes installations in new conference room spaces, including Juvenile Justice, the Governor's Crime Commission, the NCDPS secretary's office and the Special Operations Investigations Unit.
- The telepresence solution enabled and expanded telehealth services, allowing the approximately 30,000 persons incarcerated in North Carolina's 55 state correctional facilities to receive care from more than 200 medical practitioners in 35 clinical specialists. This solution received the 2022 National Association of State Chief Information Officers' Award for Information Communications Technology Innovations and the 2021 North Carolina Governor's Award for Efficiency and Innovation and has been featured in the prestigious Journal of the American Medical Association.

### Transportation

- Implemented a new permit information management system for the N.C. Department of Transportation's oversize/overweight vehicle permitting. The new system allows users to apply for permits using a new map-based interface and to obtain annual permits through a self-service website.
- Implemented a paperless property damage claim reporting system for NCDOT, significantly reducing wait time by allowing users to report damage and submit photos on NCDOT.gov. NCDOT employees can access a dashboard of claims to review and



process, with status tracking and reporting capability. This system eliminated paper-tracking inefficiencies and long mail-related wait times.

- Enhanced NCDOT's Citizens Action Reporting System to enable map-based, mobile-friendly pothole reporting, increasing efficiency for maintenance staff. As the public reports potholes and other road maintenance issues via an interactive map, NCDOT employees save time and operate more safely by traveling directly to the GPS coordinates of the reported issue. This helps NCDOT employees meet their legislatively mandated turnaround times for road maintenance tasks.
- Implemented a new unclaimed vehicle online payment system for the N.C. Division of Motor Vehicles, using the state's mobile and website application that allows completing multiple services in one transaction. This system eliminates costly paper processes and reduces turnaround time for individuals and businesses, particularly garages and dealerships, that file liens against abandoned or unclaimed vehicles on their property. NCDMV License and Theft employees can also track unclaimed or abandoned vehicle reports against stolen vehicle databases and financial systems.
- Established a new Transportation Project Lifecycle Training Team to develop and deliver training.
- Implemented a modern planning application for cash model planning and reporting for NCDOT's fund administration group.
- Enhanced NCDOT's project cost estimation process, including the distribution of estimate updates and division engineer approvals, with new tools eliminating numerous manual steps and the need for duplicate entry of project information.



## Optimize and secure the state's IT and application portfolios.



Promoting the best outcomes and opportunities for the people of North Carolina requires that they can trust the security and privacy of the government systems with which they interact. NCDIT expanded its whole-of-state cybersecurity approach, coordinating with other state agencies, local governments and federal partners to protect the state's valuable data and systems.

NCDIT supported other state departments in modernizing the tools and applications they offer North Carolinians to access government services.

- NCDIT implemented a second-level review of completed privacy threshold analyses, when needed, by the chief privacy officer.
- On March 16, 2022, Gov. Roy Cooper signed Executive Order 254 formally recognizing the N.C. Joint Cybersecurity Task Force. This formalization – one of the most significant cyber defensive steps ever taken by North Carolina – helped increase awareness of the task force's capabilities. The order also encouraged critical infrastructure and key resource partners in both the public and private sectors to report significant cybersecurity incidents and coordinate cyber defensive efforts with the task force. Finally, the order created a benchmark of integration and cooperation for other states to model their cybersecurity incident response and recovery efforts.
- As part of the N.C. Joint Cybersecurity Task Force, NCDIT supported 24 state, local and academic institutions with incident response capabilities.
- NCDIT provided intrusion detection and prevention services to 43 North Carolina counties, specifically targeting economically distressed counties. This capability extended these local governments' ability to defend themselves against the exponentially increasing number of cyberthreats facing the public sector.
- The department organized and allocated \$1.4 million for an ad-hoc cybersecurity remediation initiative to explore options for assisting public safety answering points, commonly known as 911 call centers. Planning has started in three areas: tabletop exercises, multifactor authentication expenditure assistance and ongoing training for staff.
- The N.C. Department of Public Safety's antivirus security posture was improved by migrating its endpoint and server security suite to a next-generation antivirus solution that uses modern threat detection methods, including deep learning and artificial intelligence, to identify and remove threats more effectively.



## Promote an inclusive and innovative workforce.

NCDIT values diversity, equity and inclusion and continues to promote it throughout the agency by implementing thoughtful, practical, innovative and data-driven strategies. The agency has invested in an interconnected set of training and education solutions to develop and retain a skilled and diverse workforce. Continuing its culture journey, NCDIT has sought to involve employees across divisions in transparent ways to promote a collaborative and innovative organizational culture.



The first class of NCDIT's Leadership Development program graduated in August 2021.

## WORKFORCE DEVELOPMENT

NCDIT's Workforce Development program worked to integrate, develop and retain the workforce through the provision of an interconnected set of solutions to meet organizational and employee needs. The development resources and support services offered supported culture change, system implementation, team development and change management. The program's three pillars – technical development, organization development and leadership development – were addressed with:

- Vendor-provided technical training
- Implementation of new learning platforms that more holistically meet the varied learning and development needs of employees
- Ongoing development and delivery of the NCDIT Leadership Development program
- Creation and launch of the Knowledge College, offering end-user training and information for government entities who use NCDIT services
- Increased access to more courses for managers and supervisors about equal employment opportunities, diversity fundamentals and human resources training



Employees were recognized for their years of service at Employee Appreciation Day 2022.

## DIVERSITY, EQUITY AND INCLUSION COMMITTEE

NCDIT established its first Diversity, Equity and Inclusion Committee as a central piece of the agency's equal employment opportunities plan. An agencywide call for committee members assembled a diverse group representing employees from all levels, units, offices and roles.

The committee was charged with spurring more visible discussion about diversity, equity and inclusion and equal employment opportunities, increasing opportunities for professional development and community building and focusing on collecting and analyzing EEO-driven data to drive agency initiatives.

Its first priorities were to:

- Identify recruitment and retention strategies for underrepresented populations
- Create a welcoming environment across diverse backgrounds
- Identify EEO/DEI knowledge, awareness and skill gaps and provide corresponding development opportunities



## Leverage data assets and analytics to further advance a data-driven government.

NCDIT has carried out a multipronged approach to make strategic use of the state’s data resources across all agencies while meeting emerging challenges in today’s data environment related to privacy, security and accessibility. As all levels of government generate massive amounts of data and increasingly integrate data sources to deliver essential services more efficiently, NCDIT has implemented policies and principles accepted around the world to ensure the security, analysis and interpretation of data to support informed strategic decision-making by state leaders and officials.

### DATA LINKING

NCDIT helped link the disparate data systems of many state agencies and divisions, giving them a holistic view of data related to their business areas and enabling state leaders and officials to observe long-term outcomes and make strategic, data-driven decisions.

- Central to NCDIT’s data analysis support to agencies, the department continued to upgrade its enterprise entity utility, NC eLink, which enables linking records across disparate systems to streamline records matching and improve outcomes for the people of North Carolina. Using machine learning, the matching has been tuned to meet 99.92% accuracy. The platform supports other state agencies’ population-based analytics and services projects, particularly for education, health and social programs.
- Gov. Roy Cooper signed Executive Order 249 in February 2022, establishing the N.C. Longitudinal Data System Governance Board to provide guidance and support in the development of the Educational Longitudinal Data System. The N.C. Longitudinal Data System is authorized under [N.C.G.S. 116E](#) to link individual-level student data (early childhood through postsecondary) with workforce data. NCDIT hired an executive director and analytics assistant director to lead this effort, and Gov. Cooper appointed members to the board. NCLDS began work to build the secure, governed environment that will enable the integration and sharing of data among NCLDS partners and the research community. In addition,

NC eLink Utility Modules



NCDIT’s enterprise entity utility, NC eLink, links records across state agencies’ disparate systems.

NCLDS began development of a research agenda and implementation of multiple use cases to help the team effectively manage four anticipated data access pathways: just-in-time datasets for data contributors and trusted research partners, public data tools, practitioner data tools and research-ready datasets.

- In partnership with the N.C. Department of Health and Human Services’ Division of Child Development and Early Education, NCDIT’s Government Data Analytics Center built components of the modernized Early Childhood Integrated Data System, a governed data-sharing platform to integrate disparate data and support the measurement of programs’ effectiveness and informed decision-making. The partnership published a web presence and standardized reporting, and work continued to develop the infrastructure to provide researchers access to integrated data.

- With the Governor's Crime Commission Center's Criminal Justice Analysis Center, NCDIT developed a criminal justice public portal. The portal meets stakeholders, decision-makers and the public's ever-growing need for access to data related to criminal justice.
- The department created AddressNC, a statewide dataset of addresses from the Geographic Information Systems datasets compiled for Next Generation 911. The new dataset, shared through [NC OneMap](#), had utility for many state and local government programs, including broadband expansion and voter registration.

## DATA ANALYSIS SOLUTIONS

NCDIT partnered with state agencies to enhance their analytic capabilities and provide them with support, solutions and tools to achieve their program's objectives and goals.

- Expanded automated predictive modeling of fraud/identity theft analytics to support event-based behavioral pattern analysis by the N.C. Division of Employment Security's Unemployment Program. NCDIT implemented a new alert system for suspicious registered claimants to proactively identify and stop payments of potentially fraudulent unemployment benefits.
- Supported the N.C. Department of Revenue's use of advanced analytic tools to detect fraud and tax compliance. NCDOR reported an annual efficiency gain of \$5.3 million related to its audit processes and an additional \$16.4 million in audit assessments for fiscal year 2021-2022.
- Established and implemented a case worker assist tool for NCDHHS to enhance the coordination of services and information sharing for child welfare social workers. The tool also expanded access to case managers and Childcare and Adult and Aging investigators and added child welfare and childcare data from the N.C. Families Accessing Services through Technology system.
- Integrated multiple data sources and developed risk-scoring modeling to support case managers with the N.C. Integrated Care for Kids, an NCDHHS pilot program in Alamance, Durham, Granville, Orange

and Vance counties to improve the integration of medical and social services care, to reduce out-of-home placement and to improve health outcomes for children insured by Medicaid and the Children's Health Insurance Program.

- Modernized the N.C. Department of Public Instruction's state and local education, financial, human capital and school information systems, refreshed the public-facing School Report Card portal and added to it a Spanish translation feature using Google Translate.
- Developed the Offender Reentry Coordination Utility to provide real-time functionality for N.C. Department of Public Safety case managers and district attorneys planning for the release of roughly 20,000 offenders who might have unresolved criminal charges. The utility allows them to view an offender's unresolved criminal cases, enabling a smoother transition from prison to the community.
- Supported the State Bureau of Investigation's implementation of automated expungements by developing integration tools to match expungements, fingerprinting and criminal history and to analyze expungements split into multiple court cases. This matching further ensures the public's right to have accurate records.
- Implemented a dashboard map and reporting tool for the hurricane and winter weather status of North Carolina airports, large and small. This tool provides leadership at the N.C. Department of Transportation with up-to-date, map-based information about state airports during weather emergencies. As airports self-report their status, NCDOT can monitor and share statuses more quickly, without having to contact each airport in an emergency.
- Implemented tools for NCDOT to make the required annual reporting process easier and more efficient for contractors on federally funded construction projects, NCDOT staff and the hundreds of firms involved in building roads across the state.
- Completed a critical server upgrade to NCDOT's Highway Performance Monitoring System, so reports to the Federal-Aid Highway Program are submitted on time and with up-to-date data. These reports affect the allocation of \$2 billion in federal funds for road improvement across the state.



- Deployed a modern, easy-to-use database solution that couples seamlessly with current desktop software and allows NCDOT contractors and staff to manage the complex assets associated with fiber optic systems within its rights of way.
- Developed and implemented a new system for NCDOT construction project letting activities, along with custom tools such as an letting admin dashboard, interested parties list and contracts tool.
- Integrated NCDOT financial systems with an external partner to enable direct data access, improving the strategic planning input provided to NCDOT executive leadership.

## PRIVACY

NCDIT hired the state's first chief privacy officer in December 2021, who established the Office of Privacy and Data Protection and implemented a statewide privacy program to strengthen North Carolina's privacy and data protection posture. The chief privacy officer conducted an extensive review of the state's existing privacy controls and interviewed stakeholders to understand how agencies address privacy risks and to identify gaps in the state's privacy posture. As of June 30, 2022, the office had completed or implemented the following actions:

- Adopted the Fair Information Practice Principles that underpin privacy and security policies. Implementation of these eight principles – used nationally and globally – guide state agencies and external partners in how to responsibly handle identifying information.
- Revised the state's privacy threshold analysis template, based on the U.S. Department of Homeland Security model, with a more robust focus on identifying and mitigating privacy risks. These steps will decrease the risk of unauthorized data access, breaches of personally identifiable information and strengthen the state's privacy posture.
- Embedded privacy into executive-branch agencies by establishing designated privacy points of contact, who meet monthly to discuss state privacy issues. This allows NCDIT to provide support and guidance for privacy within agencies and across the state.
- Pilot tested privacy and data protection training that will be required and made available for all state employees, beginning in early 2023.
- Created website providing federal and state privacy legal requirements, policies and guidance.
- Began and continues to support privacy reviews as part of the procurement process.

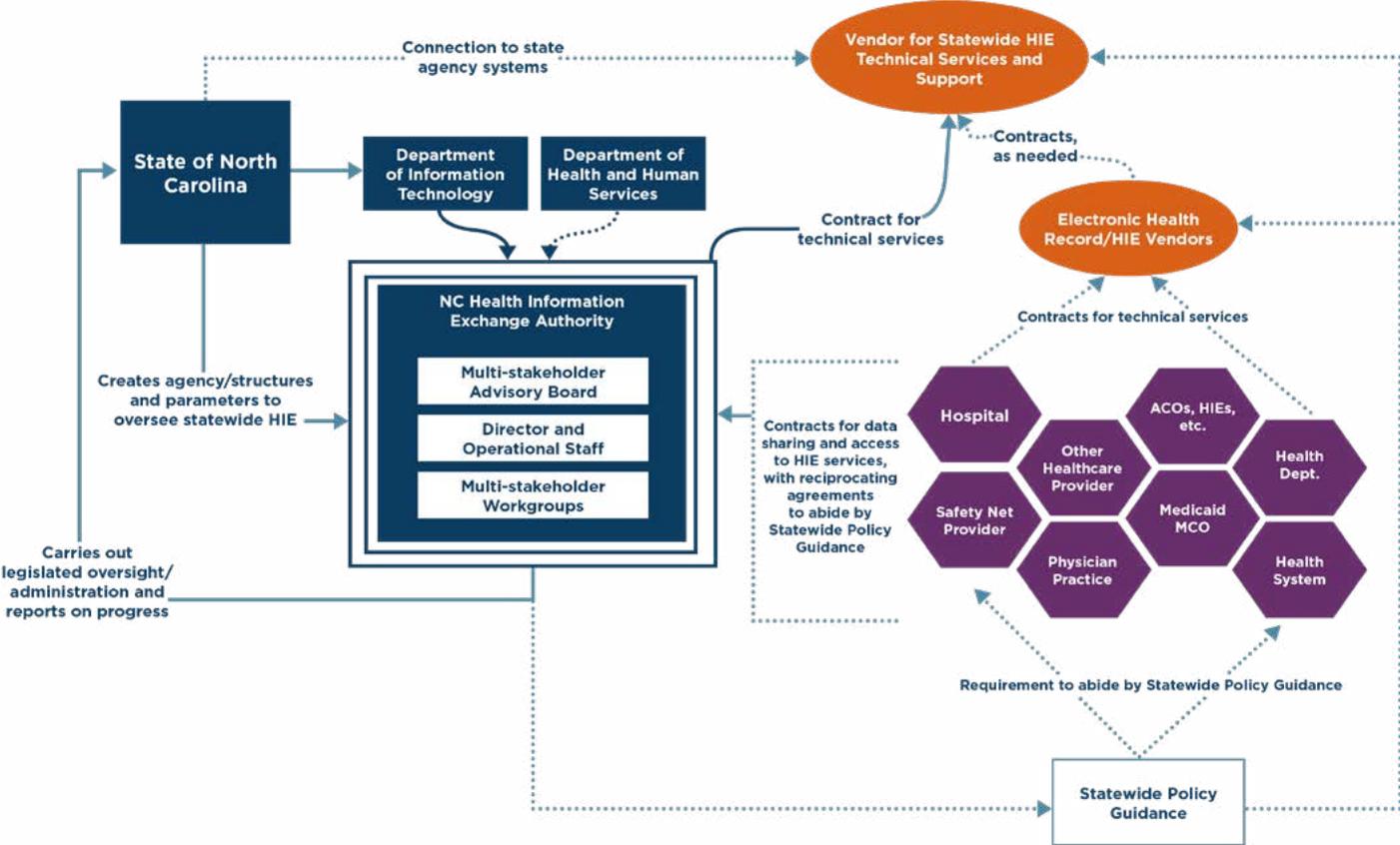
# HEALTH CARE

NCDIT developed data analysis and reporting tools to support better health outcomes for North Carolina residents through the department’s own initiatives and in collaboration with other state agencies and external partners.

- Developed the COVIDSafeNC Dashboard, a secure online reporting tool for the Office of State Human Resources and cabinet agencies to meet the vaccine monitoring and testing requirements for state employees outlined in [Executive Order 224](#). Deployed in the COVIDSafeNC workstream, the new dashboard helped managers identify employees eligible for bonus leave for receiving COVID-19 booster shots.
- Expanded health care providers’ participation in NC HealthConnex, the state-designated health information exchange. In addition to a

comprehensive report on participation submitted to the N.C. General Assembly in March 2022, 28,395 outreach letters and emails were sent to unconnected providers. NC HealthConnex gained more than 60 new health care facilities and the capability to exchange patients’ medical records with providers in more than 20 states via the Patient Centered Data Home the eHealth Exchange networks.

- The N.C. Health Information Exchange Authority, which runs NC HealthConnex, conducted an enterprise-wide data integrity audit to improve anomalies in participants’ data submissions.
- Collaborated with the N.C. Division of Public Health to develop a population-health Stroke Registry Dashboard and to build connections enabling more public health use cases and integration between the State Laboratory of Public Health and NC HealthConnex. NCDHHS’ patient matching was enhanced by linking its data systems to a centralized pandemic-response hub.



The governance structure for the N.C. Health Information Exchange Authority



# Awards and Recognitions

## NASCIO

### **NCDIT's Prison Telehealth Program Wins NASCIO Award, Cybersecurity and FirstTech Are Finalists**

The National Association of State Chief Information Officers awarded the 2022 State Government IT Award in Information Communications Technology Innovations to the collaboration between NCDIT and the N.C. Department of Public Safety to introduce efficiency and innovation into the Prison Telehealth Program.

[NCDPS's Prison Telehealth Program](#) won in the Information Technology Communications Innovations category for introducing efficiency and innovation into state correctional facilities.

"The ever-changing demands and challenges of our increasingly digital world mean that state governments must be nimble and innovative to meet the needs of our constituents," James Weaver, state chief information officer and NCDIT secretary, said. "This NASCIO recognition demonstrates that across agencies, North Carolina state government is embracing the tools and creative thinking we need to effectively and securely serve our residents, businesses and visitors with digital solutions that can meet them any time, anywhere, on any device."

The prison telehealth program, undertaken by NCDPS and NCDIT-Public Safety staff in partnership with UNC Health, transformed the delivery of health care at all 55 state correctional facilities while increasing safety and producing significant cost savings through reduced transportation and staffing needs. With a pilot telehealth program underway in January 2020, the COVID-19 pandemic spurred an expedited expansion of the program.

The telehealth program allows the approximately 30,000 people incarcerated in North Carolina correctional facilities to access secondary and tertiary health care in more than 35 medical specialties from more than 200 specialist doctors, nurse practitioners and physician assistants.

“ This project makes a tremendous difference in North Carolina correctional facilities’ ability to provide health care to offenders and eases the burden on staff to transport offenders for medical care. It was achieved through a tremendous, collaborative effort by Public Safety and NCDIT staff to overcome technical issues in the middle of the pandemic.”

GLENN MACK  
*NCDIT-Public Safety CIO*



NCDIT-Public Safety CIO Glenn Mack and Secretary Jim Weaver accept the NASCIO Award for ICT Innovations.

## **NORTH CAROLINA NASCIO AWARD RECIPIENTS AND FINALISTS**

NASCIO also gave finalist and recipient honors to seven more technology projects by North Carolina state agencies in the 2022 State Government IT Awards, which recognize innovative technology solutions and leadership among state governments. NCDIT led and collaborated with state partners in many of these projects. These state projects were recipients and finalists in the following award categories.

### **Recipient**

#### **Business Process Innovations**

[When Minutes Mattered: Automated COVID-19 Reporting System Saved Hospitals' Time and Reduced Administrative Burden](#)

*N.C. Department of Health and Human Services*

### **Finalists**

#### **Cybersecurity**

[Collective Defense and Support: A Whole-of-State Approach to Cybersecurity](#)

*N.C. Department of Information Technology*

#### **Emerging and Innovative Technologies**

[Life-Saving Innovation: ATSC 3.0 in Public Safety Communications](#)

*N.C. Department of Information Technology*

#### **Enterprise IT Management Initiatives**

[North Carolina: Transforming Procurement in the Cloud](#)

*N.C. Department of Administration*

#### **Cross-Boundary Collaboration and Partnerships**

[The Pandemic Electronic Benefit Transfer \(P-EBT\) Program: Administering Additional Food Assistance Benefits to North Carolina's Students and Children](#)

*N.C. Department of Health and Human Services*

#### **Data Management, Analytics and Visualization**

[Unemployment Insurance Fraud: Fraud Detection and Prevention through the Power of Data and Analytics](#)

*N.C. Department of Commerce*

#### **Digital Services: Government to Business**

[Expediting North Carolina Business Creation: An Online Document Filing Wizard](#)

*N.C. Secretary of State's Office*



NCDIT-Public Safety CIO Glenn Mack accepts the NASCIO Award for ICT Innovations.

## NC TECH AWARDS

### NC Tech Honors Angie Bailey as 2022 Tech Woman of the Year, Names Four Award Finalists

NCDIT's Broadband Infrastructure Office Director Angie Bailey was named the NC Tech Association's 2022 Tech Woman of the Year as part of the N.C. Tech Awards, North Carolina's only statewide technology awards program for innovation, growth and leadership in the technology sector.

NCDIT also had four finalists in awards for data analytics, cybersecurity, public safety and health care.

"We are thrilled that the NC Tech Association recognized Angie as the 2022 Tech Woman of the Year for her dedication to expanding broadband infrastructure access to all North Carolinians," said NCDIT Secretary and State Chief Information Officer Jim Weaver. "She is a phenomenal asset to NCDIT and is instrumental to our efforts to connect the 1.1 million residents on the wrong side of the digital divide."

“ The current investments in broadband infrastructure are an unprecedented opportunity for moving our state forward and ensuring that truly no communities are left behind. We have built an amazing, dedicated team at NCDIT to implement these programs. I am grateful for the recognition for all of us, and the opportunity to guide this critical work.”

ANGIE BAILEY

*Director, NCDIT Broadband Infrastructure Office*

Bailey has made closing the digital divide in North Carolina, one of Gov. Cooper's top priorities, the office's top initiative. Her wealth of knowledge and leadership skills are helping the office expand affordable, high-speed internet access, so all North Carolina homes and businesses can participate in the modern digital economy.



NCDIT's Broadband Infrastructure Office Director Angie Bailey was named the NC Tech Association's 2022 Tech Woman of the Year at the NC Tech Awards ceremony in November 2022.

The NC Tech Association recognized Bailey for her work overseeing nearly \$1 billion in funds for broadband infrastructure programs appropriated by the N.C. General Assembly from the American Rescue Plan, as well as additional future funding from the Bipartisan Infrastructure Law to expand high-speed internet access.

With more than 20 years of experience in broadband planning and development in North Carolina, Bailey has extensive expertise in broadband policy issues, rural and community development, coordination of statewide programs, and fostering partnerships with broadband providers. She has led the Broadband Infrastructure Office within the NCDIT Division of Broadband and Digital Equity since August 2021, first as interim director and then as director beginning in December 2021.

"With Angie's leadership, NCDIT has already awarded over \$270 million in broadband infrastructure grants this year - more than 26 percent of the \$971 million appropriated for broadband infrastructure - to bring transformative change for North Carolinians in unserved areas," NCDIT Deputy Secretary for Broadband and Digital Equity Nate Denny said.

## NC TECH AWARD FINALISTS

The NC TECH Association recognized four North Carolina state projects that NCDIT supported as finalists in four categories in the 2022 NC TECH Awards

### AI + Data Analytics

NCDIT's Data Division assisted the N.C. Division of Employment Security in facing new and increasingly sophisticated fraud threats during the COVID-19 pandemic by deploying the use of data management, analytics and visualization to prevent and detect unemployment fraud.

### Cybersecurity

NCDIT led the state of North Carolina in adopting a whole-of-state approach to prevent and prepare for cybersecurity incidents and support affected entities when they occur.

### Government

The N.C. 911 Board migrated North Carolina's public safety answering points onto Next Generation 911, improving the geolocation of 911 callers, enabling transferring calls between PSAPs during times of call overload and adding handling of text and video messages.

### Tech for Good

NC HealthConnex, North Carolina's state health information exchange operated by the N.C. Health Information Exchange Authority within NCDIT, has met the increasing need for modern public health infrastructure, broad access to high-quality clinical data and data analytic and sharing capabilities.



The N.C. 911 Board was a finalist for the 2022 NC TECH Award for Government for its work supporting 911 public safety answering points and telecommunicators across the state, including in Granville County, Halifax County and Jacksonville.

## DIGITAL STATES SURVEY

### North Carolina Earns ‘A’ Grade on National Digital States Survey, Award for Resilience Capabilities

North Carolina achieved an overall grade of “A” and received special recognition for its resilience capabilities in the 2022 Digital States Survey, a national biennial survey administered by the Center for Digital Governance to evaluate state governments’ use of digital technologies.

North Carolina was among six states to earn an “A” grade, recognizing that the state demonstrated very strong innovation, adopted high-performing solutions with verifiable impacts and applied excellent practices in all aspects of operations, governance and administration. The “A” grade is North Carolina’s highest ever ranking on the Digital States Survey.

North Carolina also received third place in the category of Resilience for its ability to maintain continuous IT and business operations during peak usage, disasters and crises.

“North Carolina is striving to be the model of a modern, accessible state government, and IT is integral to our success,” James Weaver, state chief information officer NCDIT secretary said.

North Carolina’s Statewide Strategic IT Plan focuses state government on three priorities:

- widespread, equitable broadband access across geographic, race and income to open up business, educational and healthcare opportunities
- digital transformation so that constituents can engage with government in real time and on multiple platforms
- a whole-of-state approach to cybersecurity, communicating and collaborating in prevention and mitigation across all levels of government

“Government exists to protect and provide for our residents. We are working toward a healthier, more prosperous, more educated and connected North Carolina. IT helps the state carry out this mission efficiently and effectively,” Weaver said.



Secretary Jim Weaver accepts the award for third place in the category of Resilience from the Center for Digital Governance at a ceremony in October 2022.

The Digital States Survey evaluated states’ efforts in 11 areas:

1. aligned leadership
2. constituent/customer centric
3. cybersecurity
4. data enablement
5. data-driven government
6. IT investment
7. resilience
8. workforce planning
9. continuous innovation
10. connected infrastructure
11. business process alignment

The Center for Digital Governance, a national research and advisory institute on IT policies and best practices in state and local government, has administered the Digital States Survey for 25 years ago to benchmark state governments’ use of digital technologies to improve service delivery, increase capacity and reach policy goals.

### NCDIT Projects Receive Best of North Carolina Technology Awards

In partnership with Government Technology Magazine, NCDIT created the Best of North Carolina Technology Awards to recognize the work and dedication of state agencies and their staff to develop better, more cost-effective and secure solutions to serve the people of North Carolina. The awards were presented in August 2022 at the NC Digital Government Summit in Raleigh, where more than 330 public- and private-sector IT professionals heard from Gov. Cooper, NCDIT Secretary Jim Weaver, NCDIT executives and IT thought leaders on automation, cybersecurity, leadership, modernization, AI, and digital equity and workforce.

*NCDIT supported the projects that received the following awards.*



NCDIT-Environmental Quality receives a Best of North Carolina Award at the N.C. Digital Government Summit.

#### **N.C. Department of Environmental Quality, N.C. Recycling Markets Directory**

NCDIT replaced the N.C. Department of Environmental Quality's old Recycling Markets Directory that was difficult to maintain and weighed down by an on-premise server infrastructure and tapestry of databases and spreadsheets. The development team rapidly built a new, modern cloud solution that has a mapping feature and allows NCDEQ to more easily update and manage the directory.

The new N.C. Recycling Markets Directory connects individuals, organizations and businesses looking to recycle materials they generate with nearby recyclers to keep materials out of the landfill and advance the state's circular economy. The directory includes 657 recycling companies, including 551 in North Carolina. Users can search from a list of 190 specific materials to find companies able to recycle them.



NCDIT's Division of Broadband and Digital Equity receives a Best of North Carolina Award at the N.C. Digital Government Summit.

#### **NCDIT Division of Broadband and Digital Equity**

NCDIT created the Division of Broadband and Digital Equity to execute Gov. Cooper's plan to close the digital divide in North Carolina. The Office of Digital Equity and Literacy – the first of its kind in the nation – was established at the same time to serve as a statewide resource for broadband affordability, digital inclusion and digital literacy initiatives.

The division aims to expand high-speed internet infrastructure access to unserved and underserved areas of the state. Since its creation, the division has launched a \$350 million infrastructure grant program, secured a National Governors Association grant to increase digital literacy, applied for additional federal funding programs and partnered with local governments and organizations to maximize the benefit of these funds to North Carolinians.



The family of Hung Nguyen, with NCDIT-Public Safety, accepts a posthumous Best of North Carolina Award at the N.C. Digital Government Summit on his behalf.

### **Hung Nguyen, N.C. Department of Public Safety**

Hung Nguyen was posthumously recognized for his tremendous positive impact after joining NCDIT-Public Safety in 2017. An exceptionally talented programmer, he played a significant role in nearly every major new project over five years and greatly improved the effectiveness and efficiency of N.C. Department of Public Safety in many mission-critical areas. His work significantly improved safety for staff, outside law enforcement officers and the community at large.

Tragically, Nguyen was killed in a wreck in July 2022, but the work he produced will continue to serve and protect the people of North Carolina for many years into the future.



NCDIT-Transportation receives a Best of North Carolina Award at the N.C. Digital Government Summit.

### **N.C. Department of Transportation, QAnywhere Project**

The N.C. Department of Transportation needed a rapid response during the COVID-19 pandemic to meet social-distancing guidelines at the N.C. Department of Motor Vehicles. A team of more than 150 people from NCDIT-Transportation, N.C. Division of Motor Vehicles, NCDOT and a vendor partner enabled modules to provide contactless check-in and a virtual waiting room at driver license offices while ensuring a great, safe customer experience.

In late May 2022, the project piloted three offices followed by three subsequent rollouts over a month and half. The solution has been implemented in 66 of 117 offices and approximately 24,000 people have used the service.



Joey Ennis, interim CIO of N.C. Department of Administration, receives a Best of North Carolina Award at the N.C. Digital Government Summit.

### **Joey Ennis, N.C. Department of Administration**

Joey Ennis has contributed top-notch customer service skills to state government since 1999. He has supported the N.C. Department of Administration since 2004, through the NCDOA Division of Purchase and Contract, NCDOA Management Information Systems and State Construction and NCDIT Solutions.

Ennis has led the adoption of new technologies and the development, modernization and refinement of NCDOA's systems and tools. He has done notable work on the state construction system, the NCDOA and Governor's Office websites, Driving While Impaired Vehicle Seizure Program for State Surplus and an onboarding/offboarding tool, which other agencies have adopted.

Ennis has been a change leader in state government's transition to agile and scrum practices. He received a Secretary's Award for Efficiency and Innovation from NCDOA in 2022.





FirstTech Director Red Grasso (right) receives an award at the IEEE International Symposium on Broadband Multimedia Systems in June 2022.

## FIRSTTECH

### FirstTech Project wins National and International Awards

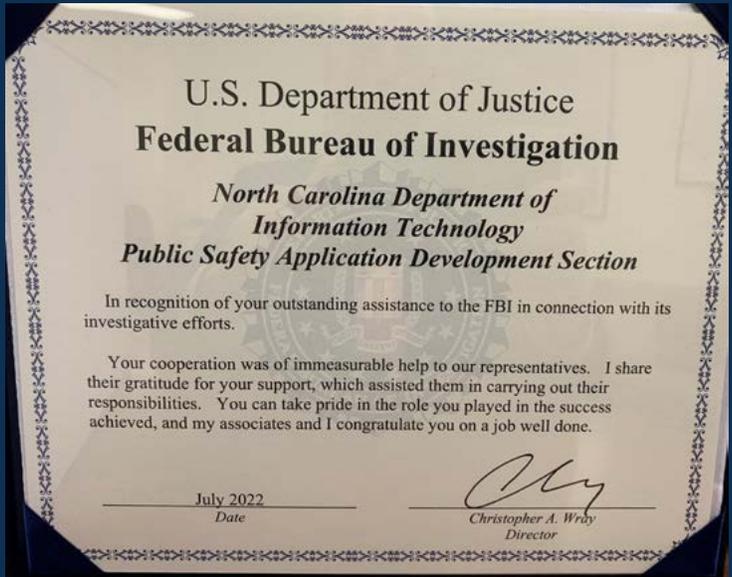
NCDIT's First Responder Emerging Technologies program won a National Association of Broadcasters Best Paper Award in April 2022 for its research into the use of television broadcast technologies for first responders' emergency communications.

The FirstTech team also continued its partnership with PBS North Carolina and the Wireless Research Center to support Device Solutions' research via a U.S. Department of Homeland Security Small Business Innovation Research grant to develop a new digital paging system over public television. The project is conducting field testing with prototype devices. The technology used in this project provides faster delivery times for public safety paging systems, which can ultimately result in saving lives.

In June 2022, FirstTech Director Red Grasso spoke about the new digital paging project and received the Best Paper Award at the IEEE International Symposium on Broadband Multimedia Systems.



The FBI honors NCDIT-Public Safety for its facial recognition solution.



### FBI RECOGNIZES NCDIT'S FACIAL RECOGNITION SOLUTION

The Federal Bureau of Investigation recognized NCDIT for developing facial recognition software for the N.C. Department of Public Safety's Special Operations Unit.

The solution automates matching photographs with current or former offenders in NCDPS's database, allowing it to respond to requests to identify individuals in pictures of offenders from the FBI, North Carolina law enforcement and other government entities.

NCDPS used the facial recognition solution developed by NCDIT to aid the FBI in identifying and arresting a suspect in the case of a serial rapist in North Carolina

## FEATURE ARTICLE

# NC.gov Delivers a Frictionless Customer and Citizen Digital Experience

How state government delivers services, resources and information is transforming. Constituents – residents, businesses and visitors – expect to easily interact with government and access the services they need.

With this in mind, NCDIT completely redesigned [NC.gov](https://www.nc.gov), the state’s centralized website portal, to create a more consistent, intuitive state government web experience for North Carolina.

NC.gov serves as a one-stop shop for all state services and was built with the users in mind – North Carolina’s residents, visitors and businesses.

The services-centered design increases the visibility and findability of services, which helps site visitors find them more quickly and easily. The site was also designed with an accessibility-first mindset for people with all levels of abilities and digital skills.

The portal’s fast-loading framework ensures strict compliance with accessibility guidelines for people with disabilities. This mobile-first, cost-efficient framework loads faster and uses less data, benefiting all users — but especially those on limited data plans who typically utilize the platform in more rural areas of the state.

The refreshed NC.gov also offers:

- An improved search function that looks across all agency websites and has an autocomplete feature to help site users find services faster
- A new way of presenting step-by-step instructions for popular services
- A directory of all state services, with a type-ahead feature that narrows results to items relevant to the user’s search term

- The new Doing Business in North Carolina section, a one-stop shop serving business owners from ideation to growth opportunities

The site refresh marked a collaborative effort among state agencies. A coordinated outreach effort brought other state agencies to the table, particularly in developing a new way for agencies to present step-by-step instructions for popular services on their own websites and automatically syndicate those and other content to NC.gov. This system has increased traffic to agencies’ pages by more than 30%.

The refresh of NC.gov has improved customer service, increased online services utilization and reduced the need for calls and in-person transactions.

The newly designed portal aligns with the state’s digital transformation goal to enable agencies to deliver services, resources and information in a more streamlined, consistent manner for people with all levels of abilities and digital skills.



# Looking Ahead

Secretary Jim Weaver and NCDIT staff are committed to delivering the department's strategic plan to provide for the information technology needs of North Carolina state government and the residents, businesses and visitors it serves.

NCDIT continues to seize the generational opportunity to expand high-speed internet access to the 1.1 million North Carolinians on the wrong side of the digital divide. NCDIT's Division of Broadband and Digital Equity is overseeing nearly \$1 billion in funds for broadband infrastructure programs appropriated by the N.C. General Assembly from the American Rescue Plan, as well as additional future funding from the Infrastructure Investment and Jobs Act. The \$350 million appropriated for the round of North Carolina's Growing Rural Economies with Access to Technology (GREAT) grants that opened in January 2022 will expand access to more than 113,000 households and businesses in unserved areas of the state and ensure that no community is left behind.

Broadband access alone, however, does not ensure knowledge of how to take advantage of digital opportunities. Digital equity demands that individuals also have the tools and knowledge to use high-speed internet to transform their communities and lives. With \$24 million in federal American Rescue Plan Act funding, NCDIT's Office of Digital Equity and Literacy has launched the state's first digital equity grant program, which will help North Carolinians afford high-speed internet, obtain digital devices and access digital literacy resources.

As North Carolinians continue to come online and safely use high-speed internet, they should be able to smoothly interact with government and find the services they need. NCDIT supports digital transformation throughout state government. The department is exploring tools to enable visitors of state websites to communicate with government more efficiently. Additionally, NCDIT is leveraging automation to improve processes and transform service delivery.



The state's online presence is undergoing constant improvement of the constituent experience to connect visitors to useful services and make transactions more efficient.

Public confidence in how the government handles and maintains constituent data is also of paramount importance. NCDIT's Office of Privacy and Data Protection is working to mature the state's privacy program and continues to provide privacy-related services to agencies, in addition to ensuring compliance with current privacy and data protection best practices and policies. The office is also reviewing how state laws could be updated. The office is developing and implementing comprehensive general privacy education and training for all employees as well as specialized role-based training. Finally, the office is working to embed privacy into existing policies and into NCDIT's incident response for cybersecurity-related privacy events.

**With these efforts in broadband and connectivity, digital transformation, privacy, cybersecurity and workforce development, NCDIT will contribute to building an equitable, prosperous, healthier and educated North Carolina.**

NCDIT remains proactive and vigilant in securing the state's digital infrastructure and assets from ever-evolving cyberthreats. In conjunction with the N.C. Department of Public Safety, NCDIT is overseeing the state's first State and Local Cybersecurity Grant program. With \$26.4 million in funding over the next four years from the federal Infrastructure Investment and Jobs Act, these grants will better equip state and local governments to address cyber risks, particularly to critical infrastructure.

Protecting the state's IT data, systems and networks, requires recruiting and retaining a skilled cybersecurity workforce. The IT Strategy Board's Cybersecurity and Privacy Committee is creating a Cybersecurity Education Pathways Program that leverages the N.C. Community College and University of North Carolina systems education programs to create credentialed employees to meet industry demand for cybersecurity professionals. The goal of the program is to recruit, educate and graduate certified cybersecurity professionals and retain their services in North Carolina by way of continuing education, internships, apprenticeships and full-time employment with the state's public and private sector employers.

To also build, retain and develop the agency's talented, innovative and diverse workforce, NCDIT employees are engaged in a journey to facilitate a culture that fosters achievement-focus, self-motivation, encouragement and connections. The next year will see the launch of a department-wide mentorship program open to all staff, as well as initiatives to incubate ideas from employees and promote cohesion throughout the agency.