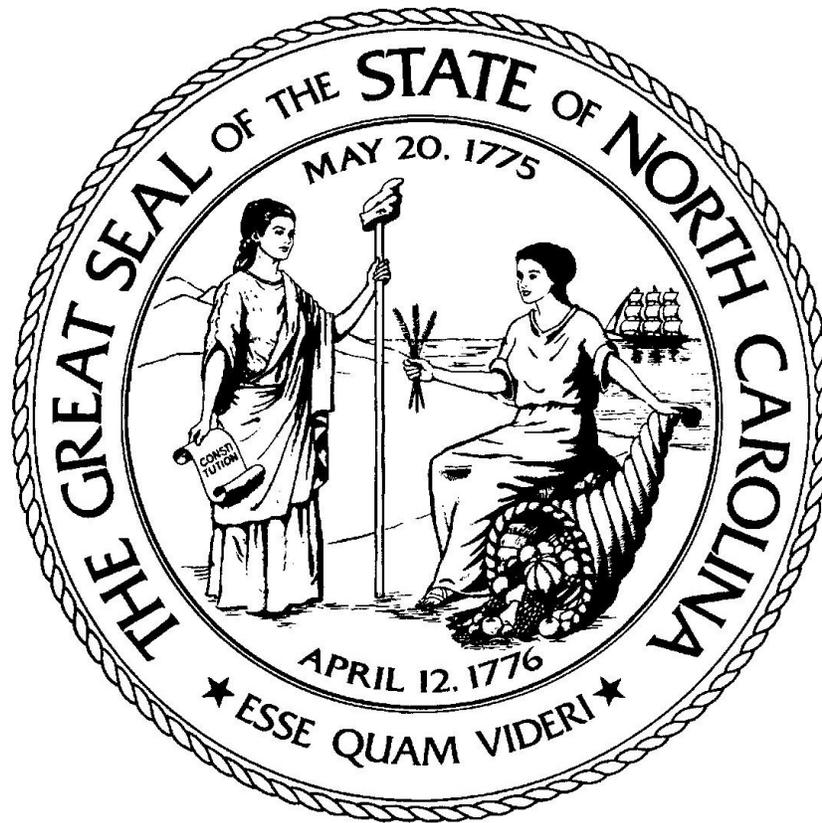


Department of Information Technology

Strategic Plan 2021 – 2023



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1. Strategic Plan Executive Summary

The Department of Information Technology (DIT) operates under the leadership of the Secretary and State Chief Information Officer (SCIO), as appointed by the Governor. The Secretary provides direct management over IT operations and has statewide IT responsibilities, including technical architecture, procurement, project management, security, broadband expansion, and government data and analytics. A full list of the powers and duties of the department can be found in [General Statute Chapter 143B, Article 15](#), which established DIT and directed the department to consolidate enterprise information technology functions within the executive branch.

DIT is the primary IT service provider for North Carolina state government. Providing shared services across agencies allows the state to realize efficiencies and cost savings through economies of scale. We are dedicated to transforming our shared IT services by adopting modern technology solutions, improving communications and collaboration platforms, and effectively managing risks and security. To that point, we will be working over the next few years to implement a service broker model. This new approach will establish a more flexible way for IT professionals to procure, deliver, and manage IT resources on behalf of the business, providing solutions that are not only more cost effective, but better meet the needs of the business.

In addition to providing technical services, DIT has a wide range of responsibilities. These range from managing statewide data analytics and statewide IT procurement, to managing the state's Health Information Exchange, and promoting broadband infrastructure expansion and digital equity across the state. The department also includes the North Carolina 911 Board.

DIT also works with agencies to maximize the state's return on IT investments. This work includes: providing sound advice based on objective facts and measurable outcomes; reviewing and consulting on designs that leverage reusable technologies; improving the security, reliability, predictability, and consistency of IT solutions; and reducing the cost to implement and operate IT systems. To that end, DIT provides project oversight in support of the secretary's governance responsibilities and establishes and maintains statewide information technology standards for the executive branch. In addition, DIT designs cost effective, proven technical solutions for state agencies as well as local governments, public libraries, and K-20 organizations.

DIT's key focus areas for the 2021-23 biennium are:

1. Improving security: DIT will continue to enhance the state's security posture over the next biennium with a variety of initiatives that incorporate security throughout the development lifecycle, increase county participation in continuous monitoring programs, and increase focus on insider threats.
2. Expanding access and adoption of broadband: Providing broadband access to all North Carolinians is a necessary and urgent task. DIT is working to address four items – infrastructure, affordability, equitable distribution and digital literacy. DIT is working to gather better data on who is and who is not currently being served through a statewide survey. This additional data will give the state a clearer picture of what and where it should focus its resources. DIT will also continue to support the state through numerous grant opportunities.
3. Creating a citizen-focused digital government: Citizens expect government to deliver services and resources with the same ease-of-use as the private sector. Our vision is a citizen-centric government that meets the expectations of residents, businesses, and other visitors. DIT will modernize and evolve its digital platforms, services, and standards, leveraging cloud services, and Agile/DevSecOps methodologies. The state will prioritize digital solutions through the governance of a cross-agency Constituent Portal Committee.
4. Implementing a service broker model for DIT: DIT will implement a service broker model, allowing staff to act as consultants to the business, understanding business needs and objectives. With this understanding, DIT will then source technology services from both internal and external partners. This

will allow us to leverage the state's resources to obtain cost effective solutions that will ultimately meet the needs of the business.

5. Initiating IT convergence efforts: With an enterprise as large as this one and technology changing as quickly as it is, prioritization of our efforts with IT convergence is essential. We will leverage our Enterprise Portfolio Management Tool to create a holistic view of our portfolio to prioritize our efforts to achieve better economies of scale and a better constituent user experience.
6. Increasing connectivity and participation in the statewide Health Information Exchange Authority (HIEA): DIT will continue to work towards statewide connectivity (per the HIE Act) and promote statewide use of the exchange through value-add services such as the NC*Notify event notification service.

2. Mission, Vision, 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

3. Goals, Objectives, and Performance Measures

<p>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.</p>		
<p>Key focus area: Cybersecurity</p>		
<p>Objective 1.1 – Integrate and operationalize cyber security tools across all state agencies by December 2023.</p>		
<p>1.1.1 – Performance Measure or Milestone</p> <p>SOP and workflow developed and followed by agencies by the end of FY 2023.</p>	<p>Strategy</p>	<p>Reduce cyber risks through Secure Software Development Lifecycle (SSDLC) Management.</p>
	<p>The ESRMO will work with other divisions of DIT and other agencies to develop standard operating procedures and a workflow for incorporating security into the application development process by the end of FY 2023.</p>	
<p>1.1.2 – Performance Measure or Milestone</p> <p>50% of endpoints integrated with security tools by Q2 FY 2022.</p>	<p>Strategy</p>	<p>Reduce risks through automation and orchestration.</p>
	<p>The ESRMO will work to integrate security tools across all state agencies by December 31, 2021.</p>	
<p>1.1.3 – Performance Measure or Milestone</p> <p>Increase usage of endpoint threat detection by 25% from June 2020 levels by Q2 FY 2022.</p> <p>Increase usage of MDM by 25% from June 2020 levels by Q2 FY 2024.</p> <p>Deploy MFA to 50% of users/devices by Q2 FY 2024.</p>	<p>Strategy</p>	<p>Enhance endpoint security.</p>
	<p>DIT’s ESRMO will work to:</p> <p>Expand / mature endpoint threat detection.</p> <p>Expand / mature Mobile Device Management (MDM) adoption and bring your own device (BYOD) policies.</p> <p>Expand / multi-factor authentication (MFA) for all state employees.</p>	
<p>Objective 1.2 – Establish and implement a whole-of-state approach to cyber and risk management by FY 2023.</p>		
<p>1.2.1 – Performance Measure or Milestone</p> <p>Monitoring and visibility in place for 60% of county infrastructure by end of FY 2023.</p>	<p>Strategy</p>	<p>Establish and implement a whole-of-state approach to cyber and risk management.</p>
	<p>The ESRMO will work with local governments, private sector partners, and academic institutions to reduce cyber risks and threats through coordination and the implementation of a continuous monitoring programs, incident response support and policies to support and a whole-of-state approach to cyber. This program will require expansion funds.</p> <ul style="list-style-type: none"> - Increase monitoring and visibility of 60% of county infrastructure by end of FY 2023. - Develop a formal mechanism to provide state and local government means through information and intelligence sharing to reduce risks within their organizations. 	

	<ul style="list-style-type: none"> - Develop formal processes to enable the state and local government to leverage resources for incident response support. 	
1.2.2 – Performance Measure or Milestone Program established by the end of FY 2022.	Strategy	Develop a Statewide Insider Threat Program.
	The ESRMO will work to develop a program to mitigate risks due to insider threats by the end of FY 2022. Insider threat is the threat to organization's critical assets posed by trusted individuals – including employees, contractors, and business partners – authorized to use the organization's information technology systems. Insider threat programs within an organization help to manage the risks due to these threats through specific prevention, detection, and response practices and technologies. This program will require expansion funds.	
Objective 1.3 – Invest in secure, scalable infrastructure for data programs by FY 2023.		
1.3.1 – Performance Measure or Milestone HIE environment HITRUST certified by Q1 FY 2022.	Strategy	Pursue HITRUST certification for the HIE.
	HITRUST certification will allow NC HIEA to better identify and manage risk along with being able to advertise its compliance and security, with the proof to back it up. HITRUST is a way to independently demonstrate NC HIEA's ongoing commitment to vigorously protecting its data and systems and demonstrate that it is a trusted business partner and data steward. One of the biggest internal paybacks is that certification dramatically decreases an organization's variability. It will ensure that standards are consistently being followed and that there is a defined process for tracking compliance and managing and staying ahead of risk.	
1.3.2 – Performance Measure or Milestone 3 APIs implemented by the end of FY 2022.	Strategy	Leverage additional APIs to create efficiencies and improve access to data.
	GDAC will work to enable the API-based FHIR standard for NC HealthConnex, which will promote interoperability and support Medicaid providers', payers', management's, and patients' access to instant, relevant patient health information. The NC HIEA's initial application of the FHIR standard will be in collaboration with NC Medicaid to support Advanced Medical Homes in their data sharing needs. GDAC will also implement an API to support sharing of EER ID to public health and an API to support sharing of DOR's address for agencies involved in debt set-off by the end of August 2021.	
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.		
Key Focus Area: State and Local Government Collaboration		
Objective 2.1 – Educate potential customers and employees on who we are, what we do, and how to work with us by the end of FY 2023.		
2.1.1 – Performance Measure or Milestone	Strategy	Educate the public and potential customers on DIT services and resources.

20 outreach engagements hosted by Q2 FY 2022.	DIT Strategic Communications staff will work with other DIT divisions to create and hold at least 20 outreach engagements by the end of CY 2022.	
2.1.2 Performance Measure or Milestone Creation and approval of initial plan by second quarter FY 2022; Phase I implementation completed by the end of FY 2022. Implement at least 3 improvements by the end of FY 2022.	Strategy	Create and Implement a Services Communication Plan to better promote the services we provide.
	DIT will work to create and implement a Services Communication Plan that includes the following tasks: <ul style="list-style-type: none"> • Create standard marketing templates for all services • Ensure Service Catalog is up to date • Improve communications to internal and external customers Ex: Comm Hub, dashboards, website • Develop a plan for communicating new features “automatically” delivered within our Cloud Services • Include Voice of the Customer activities • Review whether a DIT internal conference or lecture series would provide benefit to staff 	
Objective 2.2 – Increase collaboration among state and local entities through FY 2023.		
2.2.1 – Performance Measure or Milestone Increase in participation by 25% by the end of FY 2023.	Strategy	Increase participation in communities of practice.
	DIT staff in will work to increase the visibility of and participation in communities of practice for common skills across the state. These communities serve as collaborative outlets for individuals and provide opportunities for agencies to work together.	
2.2.2 Performance Measure or Milestone 75% of optimized agencies’ maps created and vetted in EPMT by the end of FY 2022.	Strategy	Fully document the state’s business architecture.
	DIT will work with agencies to document their business capabilities and fill in any gaps in the existing statewide capability map. DIT will work with optimized agencies first to get capabilities documented and maps created in the Enterprise Portfolio Management Tool.	
2.2.3 Performance Measure or Milestone 18 Yellow and 4 Green Belt trainings held in each FY through FY 2023.	Strategy	Hold additional Yellow Belt and Green Belt training sessions
	DIT will continue to expand its Lean Six Sigma training offerings, including 18 Yellow and 4 Green Belt training opportunities in each FY through 2023.	
Objective 2.3 – Continue to develop, maintain, and support statewide data programs through FY 2023.		
2.3.1 – Performance Measure or Milestone 25% of applications have new attributes documented by the end of FY 2023.	Strategy	Increase utilization of the Enterprise Portfolio Management Tool, focusing on the strategic planning module and beginning with optimized agencies.
	DIT will work with optimized agencies to expand collection of architectural attributes and diagrams in the tool for strategic analysis by the end of FY2023.	
	Strategy	Expand master person/business index

<p>2.3.2 Performance Measure or Milestone</p> <p>10 new data sources integrated each year.</p>	<p>GDAC will continue to upgrade and maintain the enterprise entity resolution (EER) framework that provides a standardized and consistent method of resolving/matching an entity in analytics applications and will integrate 10 new data sources annually.</p>	
<p>2.3.3 Performance Measure or Milestone</p> <p>IDMC research agenda implemented by Q2 FY 2022.</p>	<p>Strategy</p>	<p>Implement the Informed Decision-Making Collaborative (IDMC) research agenda.</p>
<p>2.3.4 Performance Measure or Milestone</p> <p>Modernized ECIDS platform implemented by Q2 FY 2023.</p>	<p>Strategy</p>	<p>Modernize the ECIDS platform.</p>
<p>2.3.5 Performance Measure or Milestone</p> <p>Statewide hydrography strategy developed by FY 2022.</p> <p>AddressNC fully populated by Q3 FY 2022.</p>	<p>Strategy</p>	<p>Provide better access to/more reliable geospatial data.</p>
<p>Objective 2.4 – Continue to provide data analytics and insights for more informed decision-making through FY 2023.</p>		
<p>2.4.1 Performance Measure or Milestone</p> <p>Complete study for HB 511 to identify gaps in data by Q2 FY 2022.</p>	<p>Strategy</p>	<p>Identify gaps in data to support criminal justice and reform.</p>
<p>2.4.2 Performance Measure or Milestone</p> <p>Integrate AOC’s new e-warrants and case management system into CJLEADS by Q1 FY 2022</p> <p>Implement new case management system for ISAAC by Q2 FY 2023.</p>	<p>Strategy</p>	<p>Maintain integrity of CJLEADS through the integration of new applications.</p>
<p>2.4.3 Performance Measure or Milestone</p> <p>Risk scoring for NC integrated care for kids delivered by Q2 FY 2022.</p>	<p>Strategy</p>	<p>Provide data analytics services for better healthcare insights.</p>
		<p>The GDAC Health Care Portfolio includes full-service delivery of the HIE (NC HealthConnex) as well as analytic reporting for the Divisions of Public Health, Medicaid and Mental Health. Goals for the coming biennium include providing risk scores for North Carolina’s Integrated Care for Kids initiative (NC InCK); enhancing clinical intelligence and reporting for</p>

<p>Diabetes dashboard enhancement complete by Q1 FY 2022.</p> <p>Stroke dashboard developed Q1 FY 2022- the end of FY 2022.</p> <p>Depression screening data extracts developed by Q2 FY 2022.</p> <p>Continue with enhancements for the Medicaid Quality Program dashboard and patient matching services.</p>	<p>chronic conditions such as diabetes, stroke and depression via dashboards, data extracts, and the NC*Notify service; continued development of analytic reporting for the Medicaid Quality Program; as well as continued enhancement of patient matching services for our agency partners.</p>	
<p>2.4.3 Performance Measure or Milestone</p> <p>Complete AI/ML proof of concept by Q2 FY 2022.</p>	<p>Strategy</p>	<p>Continue to expand revenue and unemployment fraud modeling.</p>
	<p>GDAC will explore new technologies (ex. AI and machine learning) for fraud detection and case management, starting with unemployment fraud modeling.</p>	
<p>Objective 2.5 – Improve the DIT customer experience through FY 2023.</p>		
<p>2.5.1 Performance Measure or Milestone</p> <p>OLAs are created and available to all in DIT by the end of FY 2022; Reviews occur quarterly with at least one service improvement implemented from each review cycle.</p>	<p>Strategy</p>	<p>Streamline services by improving and automating internal workflows.</p>
	<p>DIT Service Delivery will create service agreements between DIT groups with quarterly adherence reviews and will automate common workflows across the division, beginning with onboarding servers and ServiceNow workflow integration with Docusign and Ariba.</p>	
<p>2.5.2 Performance Measure or Milestone</p> <p>Provide self-service capabilities for 5 additional services by the end of FY 2023.</p>	<p>Strategy</p>	<p>Enhance self-service capabilities.</p>
	<p>DIT Service Delivery is working to increase self-service capabilities for its customers. This includes self-provisioning including enhanced AI capabilities.</p>	
<p>2.5.3 Performance Measure or Milestone</p> <p>Delivery of 95th Percentile reporting and Executive Dashboard for Network Service Availability – the end of FY 2022.</p>	<p>Strategy</p>	<p>Enhance transparency through customer dashboards.</p>
	<p>Provide customers with a dashboard to allow them to see in near-real time the network availability.</p>	
<p>2.5.4 Performance Measure or Milestone</p> <p>Review content for accuracy, redundancy, accessibility, and currency by the end of FY 2022.</p>	<p>Strategy</p>	<p>Improve the DIT website experience.</p>
	<p>DIT will work to:</p> <ul style="list-style-type: none"> • Provide a better and more consistent user experience (including website voice and tone) for website visitors • Review content for accuracy, redundancy, and accessibility • Develop and service maintain a governance document that outlines policies, procedures and best practices regarding the 	

Governance document developed by the end of FY 2022.	NCDIT website as well as other related websites, such as HIEA and Broadband.	
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.		
Key Focus Area: State and Local Government Collaboration		
Objective 3.1 – Establish new IT governance structures by FY 2023.		
3.1.1 – Performance Measure or Milestone ServiceNow governance adopted by Q2 FY 2022.	Strategy	Adopt a governance structure for ServiceNow.
	The Service Delivery division will work to implement and fully adopt a governance structure for the ServiceNow platform by December 2021.	
3.1.2 – Performance Measure or Milestone Data governance advisory groups established; policies and procedures documented by Q1 FY 2022.	Strategy	Continue implementation of enterprise data governance practices.
	DIT 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 by September 2021.	
3.1.3 Performance Measure or Milestone Vendor/supply chain risk policy, process, and procedures documented by Q2 FY 2022 and implemented by Q1 FY 2023.	Strategy	Enhance vendor/supply chain risk process and procedures.
	DIT will review and improve supply chain risks through policies and contractual language and leverage continuous monitoring capabilities to increase visibility into vendor operations.	
3.1.4 Performance Measure or Milestone Protocols/processes established/in use by the end of FY 2022.	Strategy	Develop protocols and processes for responding to research requests for clinical data.
	The Research subcommittee of the HIEA advisory board is charged with developing protocols and processes for responding to research requests for clinical data, which will be established and in use by the end of FY 2022.	
3.1.6 Performance Measure or Milestone Establish executive committee by Q1 FY 2022 Develop comprehensive strategic plan by Q1 FY 2023 Adopt a statewide longitudinal research agenda by Q2 FY 2022	Strategy	Establish the NC Longitudinal Data System Executive Committee
	The NC Longitudinal Data System Governance Committee and potentially subcommittees will be established through Executive Order and will be tasked with adoption of a comprehensive statewide longitudinal plan, adoption of governance policies that build trust with NCLDS and safeguards the data, and improve the longitudinal data system. The subcommittees may include Data Governance and Data Stewards.	
Objective 3.2 – Make legislative updates during the FY 2022 long session.		
	Strategy	Update GDAC legislation.

3.2.1 Performance Measure or Milestone Legislation revised in FY2022 long session.	DIT will work with the governor's office and the general assembly to update general GDAC statutes where necessary.	
3.2.2 Performance Measure or Milestone Legislation revised in FY 2022 long session.	Strategy	Update GS 116E.
	DIT will work with the governor's office and the general assembly to update G.S. 116E.	
3.2.3 Performance Measure or Milestone Legislation revised in FY 2022 long session.	Strategy	Update HIEA legislation.
	DIT will work with the governor's office and the general assembly to update general HIEA statutes where necessary.	
Objective 3.3 – Improve the transparency of DIT finances by FY 2023.		
3.3.1 – Performance Measure or Milestone New funding model implemented by the end of FY 2023.	Strategy	Implement a new funding model for IT based on Optimization.
	DIT 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 DIT. This model will be implemented concurrent with Phase II of Optimization.	
3.3.2 – Performance Measure or Milestone IT-specific cost centers for projects and existing applications required by Q2 FY 2022.	Strategy	Collect more accurate financial information on IT projects and applications.
	DIT will work with OSC and OSBM to require IT-specific cost centers for both projects and existing applications that will more accurately reflect IT cost information. This information will be incorporated in DIT's project and application dashboards for increased transparency.	
Objective 3.4 – Survey applications for technology convergence opportunities by the end of FY 2023.		
3.4.1 – Performance Measure or Milestone 50% of applications in the EPMT categorized by the end of FY 2023.	Strategy	Work with agencies to document duplicative capabilities/functions in the state's application portfolio.
	DIT will support agencies in the collection of information to categorize applications and document duplicative capabilities/functions in our existing application portfolio.	
3.4.2 – Performance Measure or Milestone 3 ServiceNow modules implemented by Q2 FY 2022.	Strategy	Increase adoption of ServiceNow as a core tool for NC DIT.
	DIT will grow the ServiceNow IT Service Management capabilities to include a robust knowledgebase and service management process. Additionally, HR onboarding, IT Vendor Management, and IT Asset Management will be implemented by December 2021.	
Objective 3.5 – Simplify Statewide IT procurement by the end of FY 2022.		
3.5.1 – Performance Measure or Milestone	Strategy	Increase the number of categories covered and vendors included on convenience contracts.

3 new categories on convenience contracts by the end of FY 2022.	Statewide IT Procurement will continue to work with other divisions and other agencies to identify three additional categories of products and services (ex. IT infrastructure or COTS software) for inclusion on Statewide convenience contracts based on historical purchases and demand for new products and services by the end of FY 2022.	
3.5.2 – Performance Measure or Milestone Sourcing strategy documented and implemented by the end of FY 2022.	Strategy	Develop sourcing strategies for existing statewide contracts and potential new statewide contracts.
	The Statewide IT Procurement Office will develop a formal sourcing strategy for rebidding existing contracts and issuing new contracts, better meeting agency customer needs for IT goods and services not currently available under state contracts. The strategy and resulting process will be fully documented by the end of FY 2021 and implemented/adopted by the end of FY 2022.	
Goal 4 - Cultivate our IT workforce: Attract and develop a diverse, engaged community of IT professionals.		
Key Focus Area: Workforce development, recruitment and retention		
Objective 4.1 – Establish new practices to recruit talented employees for all functional areas of DIT by 2023.		
4.1.1 – Performance Measure or Milestone 3 workgroups established to focus on active recruitment initiatives by the end of FY 2022.	Strategy	Engage in active recruitment by leveraging partners across the organization.
	DIT will engage in active recruitment by leveraging partners across the organization, starting with 3 workgroups.	
4.1.1 – Performance Measure or Milestone Workforce development plan (including focus on DIT as an attractive IT employment option) published by Q2 FY 2022.	Strategy	Establish the agency brand to sell DIT as an employment destination.
	DIT will work to sell the agency as an attractive IT employment option, starting with a workforce development plan.	
4.1.3 – Performance Measure or Milestone 30% of DIT organization shifted to statutory exempt employment by the end of FY 2023.	Strategy	Shift the DIT organization to statutory exempt employment.
	DIT has the statutory authority to create exempt positions, allowing for more flexibility in hiring time and salary ranges and is looking to leverage this capability to its fullest extent.	
Objective 4.2 – Provide development programs to help employees and managers accomplish their goals by 2023.		
4.2.1 – Performance Measure or Milestone Assessments for DEQ, DOA, DMVA, OSBM, and OSHR complete by the end of FY 2022.	Strategy	Catalog IT employee skillsets.
	DIT will conduct a skills assessment for all optimized IT employees, with DEQ, DOA, DMVA, OSBM, and OSHR complete by the end of FY 2022. The skills assessment will be used to develop a skills catalog that will allow for more efficient use of our human capital as agencies are optimized.	
4.2.2 – Performance Measure or Milestone	Strategy	Provide new training opportunities for staff focused on organizational development, leadership development, and technical skills.

Training plan implemented by the end of FY 2022.	DIT will implement an agency training plan that includes IT technical training, organizational development, and leadership development by the end of FY 2022.	
4.2.3 – Performance Measure or Milestone Employees required to engage in monthly professional development beginning with the next performance cycle Q1 FY 2022.	Strategy	Require employees at all levels of the organization to engage in monthly professional development.
	DIT will encourage its staff to maintain existing and learn new skills through monthly professional development exercises.	
4.2.4 – Performance Measure or Milestone Employee performance plans tied to the agency strategic plan for the FY 2023 cycle (June 2022).	Strategy	Practice effective employee performance management.
	DIT will link employee performance plans to the agency strategic plan beginning with the FY 2023 cycle.	
Objective 4.3 – Establish new practices to retain employees, reducing turnover and attrition by 2023.		
4.3.1 – Performance Measure or Milestone Initial market analysis complete by the end of FY 2023.	Strategy	Provide ongoing market analysis across all DIT occupational categories.
	DIT HR will conduct market analysis and provide initial results to managers throughout DIT (to determine target pay to remain competitive) by the end of FY 2023.	
4.3.2 – Performance Measure or Milestone Recognition program implemented by the end of FY 2023.	Strategy	Develop a robust employee recognition program focused on individual and team accomplishments.
	DIT will increase its focus on individual and team accomplishments, starting with a robust employee recognition program to reduce turnover and attrition.	
4.3.3 – Performance Measure or Milestone Implement 2 recommendations that come from DIT’s culture workgroup by the end of FY 2022.	Strategy	Effectively cultivate and nurture a diverse and inclusive workplace.
	DIT will work to build a diverse and inclusive workplace, starting with the implementation of recommendations from DIT’s culture workgroup.	
4.3.4 – Performance Measure or Milestone Positions converted by the end of FY 2022.	Strategy	Convert HIE time-limited staff to full time appropriated positions.
	HIE’s time-limited staff are integral to the operations of the division. DIT will work to convert these positions to full time appropriated positions.	
4.3.5 – Performance Measure or Milestone Positions converted by the end of FY 2022.	Strategy	Convert CGIA receipts-based staff to appropriated positions.
	DIT will continue its efforts to convert CGIA receipts-based staff to appropriated positions to better leverage their expertise across the enterprise.	
Objective 4.4 – Streamline human resources processes by the end of FY 2022.		

4.4.1 – Performance Measure or Milestone New processes for all DIT positions/employees/work units developed and implemented by the end of FY 2022.	Strategy	Implement a unified on-boarding and off-boarding process.
		DIT HR will work with other DIT divisions to develop and implement new, unified on-boarding and off-boarding processes for all DIT positions/employees/work units by the end of FY 2022.
Goal 5 - Empower our citizens through technology: Provide transparent, easy-to-use, and customer-focused government and student services.		
Key focus area: Broadband		
Objective 5.1 – Expand broadband and digital inclusion by the end of FY 2023.		
5.1.1 – Performance Measure or Milestone Disseminate at least \$120M connecting 41,000+ locations through the GREAT Grant Program by the end of 2023.	Strategy	Administer the GREAT Grant Program.
		BIO will conduct a minimum of two applications periods during the biennium and award \$120M (number could increase depending on the final budget) to internet service providers to connect unserved homes throughout the state.
5.1.2 – Performance Measure or Milestone Complete map by the end of FY 2022	Strategy	Map and analyze data to identify unserved areas.
		Improve data collection and analysis to more accurately identify unserved areas in the state. This will be done using the state’s updated master address data base (Summer 2021), data from the federal government and the use of contractors.
5.1.3 – Performance Measure or Milestone Digital Inclusion Plans for all 100 counties, implement HG programs in all libraries, expand telehealth to 60 additional rural counties by the end of FY2022.	Strategy	Expand digital inclusion and equity programs.
		With new state and federal resources, expand existing digital inclusion and equity programs, including the DHHS partnership to implement telehealth in 20 counties, the partnership with IEI (BAND NC) to create and implement digital inclusion plans in all 100 counties, and the Homework Gap project/partnership grant program in partnership with the State Librarian’s Office.
5.1.4 – Performance Measure or Milestone Implement the first Satellite Broadband Grant Program by the end of FY 2022.	Strategy	Implement a Satellite Broadband Grant Program.
		BIO will conduct a competitive applications process and award funding for low-orbit broadband service to eligible companies per SL 2020-81.
Objective 5.2 – Enhance the customer and citizen digital experience by 2023.		
5.2.1 – Performance Measure or Milestone Strategy developed and approved by Q1 FY 2022.	Strategy	Create a state government digital strategy.
		DIT will establish a cross-agency Digital Government Committee charged with prioritizing citizen-focused, digital services and solutions by the end of FY 2021, with a strategy developed by Q1 FY 2022.
	Strategy	Create a constituent portal.

<p>5.2.2 Performance Measure or Milestone</p> <p>Solution implemented by the end of Q2 FY 2022.</p>	<p>DIT, with the Digital Government Committee and partner agencies, will develop the design for a constituent portal, and will implement the technology solution by Q2 FY 2022. This portal will be designed to improve the government experience for all constituent personas (residents, businesses, visitors, etc.).</p>	
<p>5.2.3 – Performance Measure or Milestone</p> <p>Chatbots implemented by the end of by Q2 FY 2022.</p>	<p>Strategy</p>	<p>Leverage artificial intelligence for enhanced customer and citizen experiences.</p>
	<p>DIT will implement chatbots and virtual assistants to streamline customer and citizen interactions with government services. By Q2 FY 2022 DIT will have chatbots for both DIT-specific frequently asked questions (FAQs) and FAQs about general government.</p>	
<p>5.2.4 – Performance Measure or Milestone</p> <p>4 agencies (including DIT) adopting Agile/DevOps methodologies by the end of FY 2022.</p>	<p>Strategy</p>	<p>Enable the use of Agile/DevOps Methodologies</p>
	<p>DIT will work with agencies to adopt Agile/DevOps cultures by helping them to acquire the requisite knowledge, skills, and experience to enable self-sufficiency, sustainment, and expansion of Agile/DevOps proficiency and maturity.</p>	
<p>5.2.5 – Performance Measure or Milestone</p> <p>New IAM solution for public users implemented by the end of FY 2023.</p>	<p>Strategy</p>	<p>Modernize Identity and Access Management for the public.</p>
	<p>DIT will replace its existing NCID service with a new, more comprehensive Identity and Access Management service by June 2023. The new service will provide every business and private citizen who interacts with State applications an account with a single username and password that will enable access to State resources. The replacement of this service is a step towards a one-stop-shop approach to online interaction with government services.</p>	
<p>5.2.6 Performance Measure or Milestone</p> <p>Customer migrations begin Q1 FY 2022.</p> <p>Move the DIT Contact Center by the end of FY 2022.</p>	<p>Strategy</p>	<p>Rollout NextGen Contact Center as a Service (CCaaS) solution</p>
	<p>Implement the NextGen Contact Center for DIT</p>	
<p>Goal 6 - Modernize and centralize IT operations: Modernize and centralize technology operations to effectively support a 21st century government.</p> <p>Key focus area: Modernize</p>		
<p>Objective 6.1 – Complete Phase I of Optimization by the end of FY 2022.</p>		
<p>6.1.1 – Performance Measure or Milestone</p> <p>100% of optimized personnel and budget transferred by the end of FY 2022.</p>	<p>Strategy</p>	<p>Complete implementation of Phase I – transitioning people and budget.</p>
	<p>DIT will complete the transfer of personnel and budgets for optimized agencies by the end of FY 2022. This will require expansion funds for software quality assurance capabilities, customer relationship</p>	

	management developers, business analysts, process improvement engineers, and project managers for small agencies, as well as optimized agency chief information officers.	
Objective 6.2 – Adopt a service broker model by FY 2023.		
6.2.1 Performance Measure or Milestone Evaluate all internal toolsets and processes to meet the needs for migration to broker model by the end of FY 2023.	Strategy	Modernize our internal toolsets and processes to meet the needs of supporting cloud systems
	DIT will evaluate all internal toolsets and processes needed to meet the needs for migration to broker model by the end of FY 2023. A broker model will help avoid unnecessary costs, drive efficiencies, reduce costs overall, and make better business decisions.	
Objective 6.3 – Enable a cloud migration strategy by FY 2023.		
6.3.1 Performance Measure or Milestone DIT application inventory/assessment complete for Statewide Critical applications by the end of FY 2022.	Strategy	Collaborate with agencies, using the state’s enterprise portfolio management tool or assurance tool, to identify applications that are cloud ready and should be considered as candidates to transition to the cloud.
	DIT will collaborate with agencies to identify applications that are cloud ready. Not all applications are currently suited or aligned to utilize cloud-based concepts. The state will continue with a cloud hybrid approach by leveraging commercial cloud, private cloud, and on-premise solutions as appropriate.	
6.3.2 Performance Measure or Milestone 4 applications/processes leveraging iBPM/RPA by the end of FY 2022.	Strategy	Implement iBPM/RPA.
	DIT will implement an iBPM/RPA solution that can be leveraged for facilitating and enabling more complex digital transactions that require an elevated level of process orchestration/workflow.	
6.3.3 Performance Measure or Milestone 50% of DIT migration candidates moved to the cloud by the end of FY 2024.	Strategy	Migrate DIT applications that are good candidates for the cloud.
	DIT will migrate DIT applications to cloud environments where evaluation reveals a cloud environment provides increased customer satisfaction with lower costs, better stability, and reduced operational requirements or other criteria deemed appropriate.	
Objective 6.4 – Work with public and private entities using new and emerging broadband-related technologies by FY 2023.		
6.3.1 – Performance Measure or Milestone Pilot at least three new technologies to close the access gap by the end of FY 2022.	Strategy	Testing new and emerging broadband technologies.
	Develop a procedure for engaging the private sector to expand emerging technologies, such as TV White Space and other wireless technologies.	
6.3.2 – Performance Measure or Milestone	Strategy	Develop DataCasting Network for first responders and public safety personnel

DataCasting Plan and Implementation by the end of FY 2023.	In partnership with PBS NC develop business and implementation plan for paging alert system for first responders and public safety personnel, which uses TV spectrum and should be available to convey info when traditional radio communications systems are not working or inhibited.
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4. Highlights and Opportunities

Agency Highlights and Best Practices

While DIT has accomplished a great deal in the last biennium, there are a few areas we would particularly like to highlight. These are activities that either began or expanded in the last biennium and will continue to be focal points over the 2021-23 biennium.

Broadband

Broadband is one of Governor Cooper's top priorities. The Broadband Infrastructure Office (BIO) serves as a statewide resource for broadband access, first responder communications and classroom connectivity initiatives that the state leads. BIO works closely with other state agencies, universities, local governments, private sector organizations, and non-profits to develop programs, policies, and tools to build a 21st century infrastructure and increase digital equity throughout the state.

GREAT Grant Program

- 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 has been matched by more than \$20 million in private investment. In FY 2020, NCDIT 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.
- In fall 2020, NCDIT received 71 applications for the Special Supplementary GREAT Grant round which awarded an additional \$30 million in state funding. Projects were matched by significant private sector investment from the grantees.

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

The Broadband Infrastructure Office (BIO), in partnership with the N.C. Department of Health and Human Services Office of Rural Health, received multiple grant awards from the Appalachian Regional Commission.

- BIO was awarded \$633,940 by 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, the agencies 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.
- BIO received a \$98,273 POWER grant to conduct a feasibility study titled, "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. An additional POWER grant for a pilot was awarded based on the findings of the feasibility study.

Digital Inclusion

In 2018 Governor Cooper announced his Hometown Strong initiative to partner with local governments to support local economies, improve infrastructure, and strengthen rural communities. As part of this initiative BIO worked closely with other agency partners to establish a Homework Gap Pilot Program, which provided Wi-Fi hotspots and digital literacy workshops to families in Robeson County. The Robeson County pilot partnered the local school

district and the regional library in Robeson County to provide Wi-Fi hotspots and digital literacy workshops to 34 families.

Based on the success of the initial pilot, the program was expanded to Caswell, Hyde and Mitchell counties. 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.

In addition to the expansion grant for the Homework Gap Pilot, Hometown Strong received \$30 million in CARES act funding to keep students and teachers connected as they removed to remote learning environments. The resulting NC Student Connect program built on the successes of the Homework Gap Pilot and other Hometown Strong initiatives, providing Wi-Fi hotspots for students to check out and take home as well as providing free Wi-Fi at over 400 public sites for those without access.

Leadership in FCC Broadband Deployment Advisory Committee Working Group

The FCC plays an integral role in successfully providing access to our rural citizens. BIO has worked with the FCC and its Broadband Deployment Advisory Committee directly to ensure that North Carolina's voice is heard.

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 from across the United States, in 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.

Cybersecurity

Securing the data that the state collects from North Carolina residents is paramount. Security must remain a critical element embedded in all projects and processes as NCDIT adopts new technologies that enhance the public's interactions with state and local government.

Residents expect that their data is being used responsibly and managed safely. To that end, 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.

In FY 2020, NCDIT:

- 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.
- Increased the deployment of a threat-hunting agent to more than 30,000 endpoints across state agencies.
- 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.
- 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.
- Created a Ransomware Recovery licensing package for local governments to enable quick restart including M365 in addition to endpoint remediation, virtual servers, etc.

Digital Transformation

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.

We are taking new approaches to solving business problems through technology – automating workflows, streamlining many of our internal processes, collaborating across lines of business, and managing and understanding our data more effectively. We are also working to be more agile and adaptable as we respond to changes in business needs. To do this, we need to understand the business of the state – what it is and who does it – which is why we are creating a statewide business architecture. A fully documented business architecture will show where we need to focus our efforts for the creation and use of enterprise applications, common platforms, and enterprise services. Our enterprise portfolio management tool (EPMT) supports a complete IT portfolio management approach for the state's IT investments, including the ability to manage application and infrastructure portfolios.

Business architecture: DIT has begun documenting the business architecture and capabilities of state government, which will help determine where there are commonalities and overlap from a business perspective, how data can be shared, and how we can streamline business processes. To date, we have completed the initial statewide business capability map, documented the business architecture for the Departments of Administration and Public Instruction, and integrated business architecture as an initial step in architecture review process.

Portfolio management: Processes to support application portfolio management (APM) practices are in place, and agencies have reported two years of application cost data in the tool. Based on the APM efforts, DIT has expanded the data captured to include identity and access management information that will lay the foundation for the replacement of NCID. As noted in the strategies for the coming biennium, DIT will continue to expand data collection so that the EPMT repository can be used for decision-making at multiple points in the application procurement/development cycle.

In addition to these foundational management components, over the last two years, DIT has:

- 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.
- Expanded the use of the PayIt platform to provide the public the ability to register to vote online in partnership with the N.C. Division of Motor Vehicles and State Board of Elections.
- Implemented a new tool called 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. In addition to NCDIT, DHHS is also leveraging Sprinklr with DPS in the queue.
- Leveraged an existing contract to support an intelligent business process management (iBPM) solution that can be leveraged for more complex digital transactions. This solution will provide process orchestration/workflow and intelligent automation (IA) capabilities for existing applications without having to redevelop those applications on another platform. 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, by leveraging a platform that is already widely used across most agencies will further achieve economies of scale.

- Provided 23 Yellow Belt training sessions and 6 Green Belt training sessions.

State and Local Government Collaboration

Both state and local entities are managing with limited resources. Leveraging economies of scale, where possible, reduces the burden, particularly for smaller local governments. Many divisions within DIT collaborate with state and local governments, and two of the most active are cybersecurity and the 911 Board.

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

Cybersecurity

- Supported 16 state, local and academic institutions with incident response support, remediation and recovery from ransomware attacks by funding and supporting the National Guard National Guard's North Carolina Assessment and Assist Team's (NCAAT) efforts.
- Deployed iSensors on 20 county infrastructures to proactively monitor local networks and to facilitate the information sharing of threats.
- Implemented continuous monitoring of 100 counties as well as executive branch state agencies, 58 community colleges and 118 local education authorities for network vulnerabilities using security scoring mechanisms. 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.
- Developed a Statewide Cyber Response Task Force that included state, federal and local government, i.e. NCLGISA IT Strike Team resources to assist public sector entities impacted by cyber incidents outside of their control. Supported the cyber response remediation and recovery of 7 state, local and academic institutions impacted by ransomware during 2019. This included a single engagement that impacted over (18) different locations.

911

- The N.C. 911 Board staff continued its critical work with local governments and first responder agencies to migrate 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. The team migrated 78 PSAPs through FY 2021.
- The NC 911 Board's NG911 GIS initiative has resulted in the creation of a statewide GIS dataset which is critical for the delivery of accurate 911 call locations.
- The NC 911 Board has established and is operating an NMAC, housed in the EDC, to serve as the network operations center with 24/7/365 monitoring of the statewide ESInet
- The NC 911 Board has an initiative to conduct security assessments for all 127 PSAPs in the state

Data and Analytics

The Government Data Analytics Center, which operates as a division of NCDIT, works to transform data into information to facilitate decision support, increase operational efficiencies, and improve outcomes for the citizens of North Carolina by integrating and sharing data assets.

Healthcare

Expanded statewide clinical notifications: The NC HIEA's statewide notification service, NC*Notify, has grown exponentially in the last year providing on average 500,000 alerts monthly on approximately 2.5 million patients. New alerts added in the most recent version include COVID-19 lab result alerts; High utilizer alert; Dental alerts; Care team change alert; Diabetes diagnosis alert; and a Chronic care management alert based on the CMS chronic care management program.

Developed COVID-19 dashboard for Medicaid to monitor COVID's impact on the Medicaid population: NC Medicaid's partnership with NC HealthConnex, North Carolina's health information exchange, has accelerated during the public health emergency. NC HealthConnex is using NC Medicaid eligibility data to subset the clinical data in the health information exchange and create a Medicaid COVID-19 clinical dashboard. The dashboard provides insights on how demographic and geographic subgroups are experiencing the virus and the trajectory of the disease within the Medicaid population. Moreover, what NC HealthConnex has been able to accomplish with the Medicaid COVID-19 dashboard will serve as a template for future quality and population health analytics that use the clinical data in the health information exchange." (see page 44 - [NC Medicaid Annual Quality Report](#))

Enabled increased COVID-19 data exchange during the public health crisis: In 2020, the NC HIEA partnered with DHHS on the public health response standing up bidirectional data exchanges and automated reporting for COVID lab testing and COVID vaccine administration leveraging the technical infrastructure in place with the state-designated HIE and the health care community. Additionally, the NC HIEA is providing additional de-identified clinical data to the NC Detect program to support expanded syndromic surveillance related to COVID and COVID-like illness.

Criminal Justice and Public Safety

Sex offender registration: GDAC supports the criminal justice community by integrating and transforming data to improve public safety. This integrated environment known as CJLEADS also supports the criminal justice related compliance analysis and investigation. In 2020, analytics were developed to identify data anomalies associated with sex offender registration. This past year we developed registration compliance analysis for both North Carolina and out-of-state sex offenders who have a presence in North Carolina. To date we have identified over 6,000 sex offender suspected registration compliance alerts.

Insurance Crimes Investigation System (ICIS): To further assist in criminal investigations, GDAC partnered with Department of Insurance to develop an advanced analytics case management system which supports criminal intelligence management, confidential information management, expungement, investigation case management, chain of custody, and prosecution. This total case management package has enabled the DOI investigative team to be more efficient while also ensuring case investigation management is maintained to support prosecutorial outcomes.

NC Gun Purchasing Disqualifying Analytics: In partnership with the State Bureau of Investigation (SBI) and Administrative Office of the Courts, the GDAC developed the NC Gun Purchasing Reporting Analytics System, which identifies and reports NC offenders who have a convicted offense which disqualifies them from gun purchases. NC Offender's with disqualifications are reported to the National Instant Criminal Background Check System (NICS) which alerts firearm sellers and Federal Firearm Licensees, of a person's ineligibility. To date,

approximately 72,052 NC offenders have been identified as ineligible for gun purchases which resulted in 494 denials.

Longitudinal and Performance

NC LDS: North Carolina General Statute, 116E defines the NC Longitudinal Data System (NC LDS) as a state-wide data system supporting student and workforce data. The purpose of this system is to facilitate and enable the exchange of data among agencies and institutions within the State, in support of analysis of educational programs and performance. GDAC collaborated with Education Cabinet to form a NC LDS Work Group (the Work Group) to guide the mission and deliverables of *the NC LDS Modernization Road Map for the NC LDS Study* (the Study). We also developed and executed the Memorandum of Understanding (MOU) to allow that data exchange between the NC LDS partners/stakeholders, adopted Rules for the NC LDS and participated in the development of a proposed research agenda to assist in driving the data needs.

Economic Recovery Dashboard: In response to COVID-19 Pandemic, longitudinal analysis was conducted in partnership with Golden LEAF and the NC Pro Office to provide insight on the impact of State and Federal assistance to NC business. Through the integration of 49 data sources which included economic indicators, grants, loans and other business data, economic dashboards were developed to assist in the business impact analysis and needs.

Fraud and Compliance

GDAC has an established fraud program working with several agencies. GDAC has a long-standing program with both DOR and DES to support the identification of Tax refund and unemployment benefits fraud.

DOR: This past year DOR estimated a saving of over 50 million dollars which was attributable to improved efficiencies gained through the continued adoption of electronic filing of NC-3, W2 and 1099 using the GDAC platform and the data analytics supporting the identification of refund fraud.

DES: The COVID-19 pandemic heightened the needs to have trusted analytics in place to support the increased occurrences of identity theft as a mechanism to retain unemployment benefits through nefarious methods. GDAC provided the integration of 20 new business rules and advanced modeling to identify clusters of and individual claimants with attributes that indicated possible identify theft.

Center for Geographic Information and Analysis

CGIA plays a critical role in statewide geospatial coordination, planning, and data development to support shared interests and problems of the State of North Carolina and often beyond.

Working Group for Enhanced Emergency Response (WGEER): In 2020 the WGEER was formed by the North Carolina Geographic Information Coordinating Council (GICC) in response to Hurricane Florence to improve coordination and planning for future state emergencies. The project brings together federal, state, and local authoritative datasets into a single data sharing platform to ensure all agencies are using and reporting on the same data. CGIA served as the technical lead. The working group has also worked on a more formalized method to identify and share GIS personnel with specialized skills during events to aid local governments in need. CGIA implemented an online, secured, data sharing platform using ESRI's open data Hub to support the WGEER. WGEER community members share data directly with the platform, and other authenticated members can consume real time data for internal analysis and mapping.

Cloud migration: Over the last 2 years, CGIA has made great strides to migrate the entire CGIA technical footprint to the cloud. Currently, CGIA has migrated over 90% of its footprint to the cloud and this will be 100% complete by June of 2021.

Enterprise Entity Resolution

The Enterprise Entity Resolution (EER) platform provides a standardized protocol to match like records across entities for consistency and accuracy. Expanding upon lessons learned from the GDAC analytics, the enterprise solution improves efficiency in records matching across the multiple domain areas by matching the records once, for use in reporting and analytics. The goal of Enterprise Entity Resolution (EER) is to provide reusable cross-match capability to standardize matching and improve data sharing across entities. With an initial focus on the matching of person records, the EER platform has crossmatched 21 data sources which included 146 million records into 34 million clustered entities to support analytic modeling and longitudinal analysis. This next year as we expand our footprint and data points, the EER platform will begin matching business and employers data across disparate systems. Advanced analytics will be developed to aid in the performance and tuning of the model and to accommodate data quality issues and API development and a strong data governance model will enable the sharing of the matching of records to authorized users to support their reporting and analytics.

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 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 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.

Provide public officials and health care workers/experts with data to make informed decisions during the pandemic

- 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 statewide providers, nursing homes and others to gather information for reporting cases, knowledge information on questions and virtual agent support to help during the pandemic. DHHS 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 59 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 68 PSAPs still on legacy systems and has earned high praise for its continued efforts from both the legacy and Next Generation 911 communities.

Expand collaboration tools allowing state government employees to work remotely

- 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 work force. 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.
 - 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 than pre-COVID-19.

Provide rural and low-income communities with access to the internet

- 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.

Provide the 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.

Protect the state's cyber infrastructure and data

- 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. 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.

Potential Initiatives

The initiatives we intend to pursue as an agency are outlined in the goals section above. The specific statewide IT initiatives we intend to pursue are documented in the Statewide IT Plan.

Collaborative Opportunities

Several of the initiatives DIT will be working on during the 2021-23 biennium have collaborative components.

- Expand ServiceNow implementation: DIT will continue to roll out ServiceNow modules such as HR, Facilities, and/or contracts, which will allow for process standardization at the State level for common needs. Using the same platform will allow agencies to work together seamlessly, breaking through the inefficiency of current inter-agency processes.
- GDAC collaborations: DIT and the Data Division will collaborate with all state agencies, local governments, and others to implement enterprise data management practices and improve analytic output. Collaboration based on shared business objectives and cross-agency data integration will support and deliver enterprise intelligence.
- Continuous monitoring for counties: The ESRMO will continue to work with counties to increase participation in the continuous monitoring program with training and other resources.
- Implement the financial backbone for the state: The state's financial backbone is run on 30-year-old technology that is coming to end of life. DIT is working with the Controller to implement a replacement solution in the coming biennium.
- Implementation of a cloud-based Human Capital Management (HCM) system: DIT is working with OSHR to implement an integrated solution that is user-friendly, agile, scalable, maintainable and regularly updated providing capabilities for core HCM processing for the entire employee life cycle from recruitment, to hire, to termination/retirement and everything in between. A technical solution of this nature provides the opportunity to streamline processes, centralize information, reduce costs and provide for consistency and improved user experience.