

2025 Climate Strategy Report

N.C. Department of Information Technology

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Introduction

About the N.C. Department of Information Technology

The N.C. Department of Information Technology (NCDIT) oversees and provides IT services to state agencies, local governments and educational institutions across North Carolina. The department was established as a cabinet-level agency in 2015 to consolidate enterprise information technology functions within the executive branch. A full list of the powers and duties of the department can be found in General Statute Chapter 143B, Article 15. The department is dedicated to transforming our shared IT services by adopting modern technology solutions as well as improving communications and collaboration platforms to meet our customers' needs while effectively managing risks and security.

N.C. Department of Information Technology's Vulnerabilities to Climate Change

IT systems are vulnerable to climate changes as weather patterns change, with wind and flooding events already increasing and predicted to keep doing so in the coming years. IT engineers must now take into consideration the possible effects of climate change within their architecture designs, as IT systems not designed within an environment architecture that protects against these new threats can be especially vulnerable to these threats. NCDIT system architecture/cyber engineers continually evaluate the physical and virtual environments of all state IT resources to mitigate climate change impacts on these state assets.

N.C. Department of Information Technology's Approach to Fulfilling the Strategies in the Climate Risk Assessment and Resilience Plan

NCDIT has approached this strategy in two ways. First, internally, we are improving and modernizing our information technology and data center services and increasing their resilience against weather and climate changes as these threats grow. The second strategy is externally promoting climate risk and resilience information to our state, county and local government agencies. We do so by expanding our documents to include these risks and responsibilities, as well as assigning roles and responsibilities within our organization. As our organization's understanding of roles and responsibilities matures, our internal staff can participate in a more informed way, and we can engage our external partners in these strategies.

NCDIT will continue to develop impactful policies, expand our outreach to external partners, develop future budgets to include strategies for improving our climate change mitigation and build a stronger resilience plan within the next 24 months.

Reducing Energy Use

Tony Brackett, NCDIT facilities manager, has been acting as the energy manager since January 2019 and has been monitoring the Western Data Center's utilities for many years. The accomplishments made under Brackett's leadership include:

- Reduced British thermal units (BTUs) per square foot by 13% since 2018-2019.

- Installed LED lighting and added motion sensors in both the Eastern Data Center and the Western Data Center.
- Installed plug-and-play T8 bulbs at the Western Data Center and replaced very old fluorescents at the Eastern Data Center with new LED fixtures.
- Reduced generator test run time at both data centers.
- Raised the Western Data Center room temperature from 60 degrees to 68 degrees.
- Assessed conditions at the Western Data Center and identified a number of fans and cooling units that can be shut down and put into a rotation.
- Conducted an electrical study to determine the power needs of the Eastern Data Center. When the project is completed, we will be able to better monitor consumption and locate areas to improve.
- Scheduled off-shift setbacks using the building management system (BMS) to reduce the heating and cooling load.
- Reduced water consumption by identifying and capping leaks from aging underground piping.
- Installing new smart power bars in data centers additions and replacing old power bars as needed with smart bars.

NCDIT continues to reduce internal environmental impacts by improving energy efficiency in our Eastern and Western Data Center facilities and within our Raleigh headquarters. This is being accomplished by implementing additional monitoring tools and augmenting manual processes already in place. Our organization is investing in improving our existing data center monitoring tools, including replacing existing analog reporting systems for our facility reporting activities.

Addressing Environmental Issues

NCDIT's Division of Broadband and Digital Opportunity is driving economic and workforce development by enabling all North Carolinians to fully participate in the digital economy through programs expanding access to high-speed internet, digital devices and digital skills across the state. While not directly aimed at climate resilience, these programs create opportunities for new ways of working and learning that have less environmental impacts, such as reducing commuting and paper use. Annette Taylor, deputy secretary of the division, also serves on the Andrea Harris Task Force and advances issues of digital opportunity in the task force's work to create economic stability in disadvantaged communities, improve health and wellness in underserved areas and achieve environmental justice.

NCDIT partners with two nonprofit digital device refurbishers, Kramden Institute in Durham and Eliminate the Digital Divide (E2D) in Charlotte, to help reduce e-waste and get refurbished computers into the hands of North Carolinians who do not have one at home. Kramden Institute has offered educational programs since 2003 to help North Carolinians learn basic computer literacy skills and support the skills of youth in the Triangle region through numerous STEAM camps and after-school programs. Since 2013, E2D has helped families find upward mobility paths through technology access for education, workforce development and critical community connections. NCDIT staff volunteer and support device donation events for both organizations so used devices can be refurbished and distributed to individuals across the state. NCDIT awarded \$1.5 million grants to both Kramden and E2D to continue expanding device distribution networks to serve all 100 counties of the state and reduce the number of households without a device.

Public Participation Plan

NCDIT recognizes that all the people of North Carolina have the right to access government services, meaningfully contribute to government decisions and share equitably in the benefits of a prosperous North Carolina. As a state agency, NCDIT plays a central role in fostering a culture that leverages technology for an equitable, prosperous, healthier and educated North Carolina and enables trusted business-driven solutions that meet the needs of the public.

We acknowledge that there is more to be done to reach communities across the state who might be unaware of and underserved by the department's programs. This includes communities of color, indigenous communities and low- and moderate-income communities. Consequently, it is necessary for these communities to be more meaningfully engaged as partners and stakeholders in government decision-making.

At the same time, building a more inclusive society affects and requires the participation of all North Carolinians. We continue to develop a [Public Access and Participation Plan](#) to better understand where gaps exist and encourage greater participation across the state in all areas of our programs and operations.

Goals, Strategies, and Actions

1.0. Reduce greenhouse gas emissions

1.1 Reduce energy consumption per square foot in state-owned buildings by at least 40% from fiscal year 2002-2003 levels

1.1.1	Install new 500-ton high efficiency chiller at our Western Data Center Status: Complete Completion Date: May 2025 The chiller is approximately 10-15% more efficient than our other units.
1.1.2	Rebuild the cooling towers at our Western Data Center Status: Complete Completion Date: October 2025 Both cooling towers were rebuilt to factory specifications. The fill, basins, diverters and rusted panels were replaced with factory Marley parts. This will bring efficiency back to original specs.
1.1.3	Roof replacement at our Eastern Data Center Status: Complete Completion Date: October 2025 The roof was replaced and updated to current insulation requirements and the latest white PVC membrane. This should reduce heat loss and heat gain. The project also entailed repairs to underdeck fireproofing and HVAC duct cleaning on the second floor.
1.1.4	Electrical phase I and II power projects at the Eastern Data Center Status: In Progress Expected Completion Date: 2026/2027 A new D leg, including a higher efficiency uninterruptible power supply (UPS), system has been installed. The UPS is approximately 25% more efficient than our current systems. The second phase will deliver the new power to the data center floor via new power distribution units (PDUs) and overhead power bars. Smart power bars in the cabinets will allow real time power monitoring.

1.1.5 Uninterruptible power supply (UPS) systems replacement at the Western Data Center

Status: In Progress

Expected Completion Date: March 2026

The three UPS units are scheduled for replacement starting with the first one on February 7, 2026. They are approximately 25% more efficient than our old units.

1.2 Support the use and expansion of energy efficient and clean energy resources

This section is not applicable.

1.3 Increase the number of registered Zero Emission Vehicles to at least 1,250,000 by 2030 so that 50% of in-state sales of new vehicles are zero-emission by 2030

1.3.1 Install electric vehicle chargers at the Eastern Data Center

Status: Completed

EV chargers are being regularly used by staff and visitors. This should encourage EV usage.

1.4 Prioritize Zero Emission Vehicles (ZEVs) in the purchase or lease of new vehicles and for agency business travel

1.4.1 Add electric vehicle to NCDIT inventory

Status: Completed

A newly purchased Chevrolet Bolt vehicle replaced a larger gas van and is used for Raleigh area administrative activities and deliveries.

1.5 Initiate other initiatives to decarbonize the transportation sector

1.5.1 Use hybrid vehicles where electric vehicles are not currently feasible

Status: In Progress

Expected Completion Date: Ongoing as vehicles are replaced

As vehicles are being replaced, we are emphasizing the need to use hybrid vehicles if electric vehicles are not feasible. We added one hybrid vehicle to our fleet this past year.

1.6 Initiate other projects aimed at reducing statewide greenhouse gas emissions

1.6.1 Develop increased use of cutting-edge information and communication technologies (ICT) to reduce annual greenhouse gas emissions

Status: Planning

The Organization for Economic Co-operation and Development (OECD) Climate Group recommends the use of information and communication technologies (ICT) in smart buildings, smart electricity grids and smart transport and logistics, which can reduce greenhouse gas emissions by 15%. We are identifying possible initiatives based on the available funding and in collaboration with other state agencies that could benefit us by increasing ICT use.

We will continue to investigate opportunities to increase the use of ICT and identify possibilities to do so in coordination with other state agencies over the next 12 months.

1.6.2 Reduction in commuting miles

Status: Ongoing

Based on a survey conducted in July 2022, NCDIT's remote work program has resulted in a 79.3% reduction in weekly commuting miles of state employees working for the agency. Prior to the implementation of our current remote work program, NCDIT employees commuted approximately 191,972 miles weekly. Currently, NCDIT employees commute 39,762 miles weekly. Our approach to hybrid work has allowed us to surpass the 20% goal set forth by the Air Quality Improvement Act without an adverse impact on our agency's work productivity.

1.6.3 Reduce paper processing and printing

Status: Ongoing

NCDIT has successfully reduced paper processing by promoting electronic reporting and distribution to state agencies. After meeting with state agencies about their individual paper reporting requirements, NCDIT has been able to reduce over 90% of paper production for those agencies.

2.0. Increase statewide resilience to the impacts of climate change

2.1 Evaluate the impacts of climate change on the N.C. Department of Information Technology's programs and operations

2.1.1 Prevent data center outages due to weather and other natural disasters

Status: Ongoing

We maintain all the critical data center infrastructure, generators, uninterruptible power supply (UPS), heating, ventilation and air conditioning (HVAC) and fire systems to the manufacturers' recommended standards.

The energy efficiency items listed in Section 1.1 also add to the resilience of the data centers. New electrical distribution, UPS systems and chiller upgrade all work to improve our redundancy and ability to stay in operation 24/7 during extreme weather events.

UPS battery replacements are in the design phase for the Eastern Data Center and are expected to be installed during 2026. The batteries are critical to carry over to generators during any power outage.

2.1.2 Add an emergency water supply reservoir for the Eastern Data Center

Status: Planning (funding needed)

Due to other critical projects Repair & Replace (R&R) funding has not been available for this yet. We hope to get funding for the 2027 budget year.

2.2 Integrate climate change adaptation practices and resiliency planning into N.C. Department of Information Technology's policies and operations

Status: Ongoing

We continue to inform and educate IT leaders on minimizing climate change impacts.

We are also developing a statement of work (SOW) utilizing federal funding for a disaster recovery and resiliency program to include climate change adaptation in supporting NCDIT data centers.

2.3 Assist the communities served by N.C. Department of Information Technology to implement climate change adaptation practices and resiliency planning

Status: Ongoing

We continue to coordinate with county, city and town IT leaders to brainstorm ideas for improving and adapting resiliency planning.

This initiative involves collaborating on ideas and solutions to assist county, city and town IT leaders in evaluating possible solutions to minimize climate change impacts on their IT systems and to ensure that their IT resources are available when needed, including when exposed to weather events and other possible vulnerabilities.

NCDIT has hired a business relationship manager to serve as a point of contact for local governments and work with them to provide solutions for business needs. NCDIT also has continued hosting quarterly town halls specifically for local and county governments to provide pertinent information to them and answer questions. In addition, staff continue to attend the biannual meetings of the N.C. Local Government Information Systems Association (NCLGISA) and identify counties that wish to participate in this initiative.

2.4 Help complete initiatives in the Natural and Working Lands Action Plan and Executive Order 305, An Order to Protect and Restore North Carolina's Critical Natural and Working Lands

This section is not applicable.

2.5 Initiate other projects aimed at increasing statewide resilience to the impacts of climate change

This section is not applicable.

3.0. Address the public health impacts of climate change

This section is not applicable.

4.0. Invest in historically underserved communities

4.1 Increase affordability for low- and moderate-income households.

4.1.1 Provide technology assets to Kramden Institute and Eliminate the Digital Divide (E2D) to help bridge the digital divide

Status: Ongoing

NCDIT partners with two nonprofit digital device refurbishers, Kramden Institute in Durham and Eliminate the Digital Divide (E2D) in Charlotte, to help reduce e-waste and get refurbished computers into the hands of North Carolinians who do not have one at home. Kramden Institute has offered educational programs since 2003 to help North Carolinians learn basic computer literacy skills and support the skills of youth in the Triangle region through numerous STEAM camps and after-school programs. Since 2013, E2D has helped families find upward mobility paths through technology access for education, workforce development and critical community connections. NCDIT staff volunteer and support device donation events for both organizations so used devices can be refurbished and distributed to individuals across the state. NCDIT awarded \$1.5 million grants to both E2D and Kramden to continue expanding device distribution networks to serve all 100 counties of the state and reduce the number of households without a device.

4.2 Create clean energy and resilience related jobs and economic growth

This section is not applicable.

4.3 Alert residents and businesses of state and federal grant opportunities that advance climate and resilience goals

This section is not applicable.



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