



# 2023 Climate Strategy Report

NC Department of Administration

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# Introduction

## About NC Department of Administration

As stated on the [NCDOA website](#), the N.C. Department of Administration serves as the business manager for North Carolina state government. The department oversees government operations such as building construction, purchasing and contracting for goods and services, maintaining facilities and grounds, managing state vehicles, acquiring and disposing of real property, and operating services such as courier mail delivery and the sale of surplus property.

Additionally, NCDOA oversees many of the state's advocacy programs, which advocate for and serve diverse segments of the state's population that have been traditionally underserved.

The North Carolina Department of Administration (NCDOA) includes: [Council for Women & Youth Involvement](#), [Historically Underutilized Businesses](#), [Commission of Indian Affairs](#), [Non-Public Education](#), [Mail Service Center](#), [Purchase and Contract](#), [Motor Fleet Management](#), [State Surplus Property](#), [State Construction](#), [Facility Management](#), [State Parking](#), and [State Property](#).

## NC Department of Administration's Vulnerabilities to Climate Change

Climate change stresses the cooling, electrical, and storm water systems at NCDOA managed buildings.

### Extreme Temperatures

The majority of the state-owned buildings were built in and before the 1970's, to design standards that accommodated the weather of the time. As weather temperatures increase above the original design standards, the buildings have a harder time maintaining a comfortable environment for occupants.

Inadequate cooling capacity could lead to loss of building use if the buildings in the downtown Raleigh complex cannot be maintained within acceptable summer temperatures. Potential consequences of loss or inadequacy of chilled water capacity range from uncomfortably warm buildings to complete loss of building use due to excessive interior temperatures and/or humidity.

Adequate chilled water system capacity currently exists to handle the summer cooling load on a typical summer day in DOA-maintained buildings, however, during peak summer cooling loads, the existing chiller plants are at maximum capacity. Some of the downtown buildings served by the chilled water loop also have chillers located at the buildings, and these chillers are needed during the hottest days. Chiller plant upgrades are underway to address this issue, but the cooling demand will continue to grow if summer weather trends continue.

### Electrical Power Loss

Electrical power is essential to the proper operation of all buildings. This power is necessary for lighting, heating, cooling, ventilation, computer and communication systems, and dehumidification.

Major climate stressors that can shut down building electrical systems are high winds, storm conditions and flooding associated with hurricanes and other high wind events. Ice storms and heavy snowfall may also result in loss of electrical power. The vulnerability and risk of electrical power loss to the state government complex in downtown Raleigh is considered low to moderate, depending on the severity and duration of the storm or flooding event. There is a low likelihood of extended electrical power loss but a moderate likelihood of temporary electrical power loss. Generators are typically provided in the larger buildings to meet pumping requirements, fire protection, and provide power for lighting and data systems during extended power outages. Extended loss of electrical service in any of the downtown complex buildings will necessitate evacuation of the building until the electrical outage is resolved.

As additional load is placed on the electrical grid through new construction and increased reliance on electric vehicles, the capacity of the electrical grid to deliver the needed power to all utility customers is a threat to resilience. It is impractical for DOA to duplicate the electric power generation capability to supply electrical power to the DOA-maintained buildings. Therefore, DOA is reliant upon the utility provider for reliable electrical power to operate the buildings.

### Storm Water

Heavy precipitation can cause significant damage to public and private structures and utility services. This, in turn, disrupts provision of government services, often coming during times when government services are critically needed.

The consequences of urban flooding include property damage, as well as damaged infrastructure and utilities, sewer lines and pump stations. When pump stations and sewer lines are damaged important infrastructure must be replaced. Additional investments in storm water resilience are needed to counter the threat of flooding.

## NC Department of Administration's Approach to Fulfilling the Strategies in the Climate Risk Assessment and Resilience Plan

NCDOA will focus on strategies to:

- reduce greenhouse gas emissions by reducing energy consumption per square foot in state-owned buildings.
- increase agency use of Zero Emissions Vehicles (ZEVs).
- help update the NC Uniform Floodplain Management Policy for state construction.
- invest in historically underserved communities.

### Reducing Energy Use

As specified in EO-80, NCDOA has appointed Ralph Taylor, from the State Construction Office, to serve as Energy Manager. Additionally, NCDOA has hired a Sustainability Specialist, Brittany Quinn, to help

design, implement, and coordinate sustainability related strategies and initiatives within the Facility Management Division and assist with sustainability initiatives within the agency.

Energy use per square foot has decreased since FY 19-20, bringing DOA closer to reaching its 2025 EO-80 goal of 40% reduction in Energy Usage Intensity by 2025 from the FY 2002-2003 baseline.

### Addressing Environmental Injustices and Inequities

NCDOA has named Haley Pfeiffer-Haynes the Environmental Justice Lead. Haley will participate in interagency Environmental Justice meetings and initiative to address environmental injustices and inequities.

### Public Participation Plan

As per Executive Order 246, the Administration Department drafted the first version of the Public Participation Plan. The plan was published on NCDOA's website and took public feedback and comments through June 30<sup>th</sup>. The plan consists of four parts including public meetings, improvement of the website, staff trainings, and ongoing improvement of public access and participation. All four areas focus on remediating barriers to participation for historically marginalized groups to create greater engagement and transparency.

## 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 LED Lighting Conversion

Status: Ongoing

Expected Completion Date: Ongoing

Fluorescent, halogen, and other non-LED bulbs are being phased out and replaced with LEDs. At least nine buildings are fully LED, and Facility Management has phased in LEDs for most building outdoor lighting.

Low light environments make seeing clearly more difficult, especially as people age. Converting to LED lighting improves NCDOA buildings' lighting quality, which increases visibility for people of all ages, helps maintain occupants' circadian rhythms, and increases productivity.

Over the next 12 months, State Construction and Facility Management will continue collaborating on several upcoming full building conversions. For buildings not slated for full conversion, fluorescent bulbs are being replaced with LED as they burn out and through small scale projects.

### 1.1.2 Government Complex Electrical Lighting Upgrades

Status: Underway

Expected Completion Date: March 2024

This project will upgrade aging lighting to LED through a combination of retrofits and light fixture replacement at certain locations. Project will also identify areas where enhanced lighting controls will improve energy efficiency.

Over the next 12 months lighting designer will perform design and analysis and provide plans and specifications for this project to award a construction contract.

### 1.1.3 Steam Trap Maintenance Program

Status: Ongoing

Expected Completion Date: Ongoing

The steam trap maintenance program, which began in 2019, surveys steam traps in the steam distribution system and replaces failed or ineffective traps. The duty of a steam trap is to discharge condensate, air, and other incondensable gases from a steam system while not permitting the escape of live steam.

Repairing steam traps mitigates steam loss, which reduces the amount of steam generation and water usage required, therefore lowering CO2 emissions.

In the next 12 months, Facility Management Division plans to continue evaluating and repairing traps within the downtown distribution system.

#### 1.1.4 Steam Pipe Insulation Project – Phase 1

Status: Complete

Completion Date: August 2022

Abated and insulated 400 linear feet of 10" steam main and 400 linear feet of 4" condensate return pipe.

Pipe insulation reduces distribution heat loss, which saves energy, and improves employee safety by covering exposed steam pipes.

#### 1.1.5 Steam Plant O2 Analyzer Replacement

Status: Complete

Completion Date: October 2022

Replaced existing analyzers with new O2 analyzers for boilers 1, 2 and 4. The stack gas oxygen analyzers measure the amount of oxygen in exhaust gas after combustion to support an efficient oxygen fuel mix, improving the energy efficiency of the boilers.

Increased efficiency results in less natural gas burned and fewer GHG emissions.

#### 1.1.6 Chiller Updates

Status: Complete

Completion Date: June 2022

Chiller Plant 2 is one of two central plants downtown that supply chilled water to the downtown complex. The plant operates two 1450-ton chillers. Chiller #1 was rebuilt and recoated, and chiller #2 was replaced.

This maintenance increases the longevity of the chillers and the resilience of the chiller plant.

#### 1.1.7 Chiller Plant 2 Expansion

Status: Underway

Expected Completion Date: December 2024

Chiller Plant 2 has two existing chillers. The plant will be expanded and provide a third chiller with space for one additional chiller in the future. This will provide redundant cooling capacity for resilience. Project is in the early design phase.

In the next 12 months, construction documents will be completed, and the project will be bid for construction.

### 1.1.8 Summer Boiler and Renovation of Old Heating Plant

Status: Underway

Expected Completion Date: June 2024

The project will renovate the Old Steam Plant and provide a “summer boiler” to allow the service of the mail boiler plant during the summer season. Ultimately this modification will allow better and safer maintenance activities.

In the next 12 months, construction documents will be completed, and the project will be bid for construction.

### 1.1.9 State Records Building Air Handling Units Replacement

Status: Underway

Expected Completion Date: January 2024

This project will completely replace the aged Air Handling Units (AHU) equipment (original to the building) with newer energy efficient AHUs. This will also replace obsolete pneumatic control systems serving the units. The space temperature and humidity are critical components of long-term stable records storage.

In the next 12 months, construction documents will be completed, and the project will be bid for construction.

### 1.1.10 Museum of History Building Controls Replacement

Status: Underway

Expected Completion Date: May 2024

Due to the age and condition of the existing pneumatic control system, this building needs a complete HVAC control system replacement. Furnish and install an upgrade to the existing DDC Building Management upgrade all field controllers with the latest revision of hardware graphics replacement of VAV box controllers and their associated reheat valves for approximately 150 identified boxes. AHU DDC controls in the mechanical rooms also will be upgraded. Replace and re-commission CO sensors in the underground parking deck. Replace existing hot water pumps; install new pumps pressure sensors and VFDs for pump speed control.

In the next 12 months, construction documents will be completed, and the project will be bid for construction.

### 1.1.11 Labor Building Window Replacement

Status: Underway

Expected Completion Date: December 2023

This project will remove existing single-pane windows and replace them with new double pane windows. The existing windows are made of wood and showing signs of deterioration and water infiltration. Replacement windows will be double pane, thereby increasing energy efficiency and providing weather protection.

In the next 12 months, construction documents will be completed, and the project will be bid for construction.

### 1.1.12 Obsolete Refrigerant Chiller Replacement

Status: Proposed

Expected Completion Date: TBD

The existing chillers at the Records, Administration and Natural Science buildings are R-123 machines that have been phased out. It is recommended for the chillers to be replaced as they are beyond repair as installed.

The project schedule depends upon funding.

### 1.1.13 Improve Chilled Water Efficiency

Status: Proposed

Expected Completion Date: TBD

Improve chilled water efficiency in buildings on the chilled water loop in Downtown Government Complex. Replace chilled water coils in Air Handling Units in buildings on the chilled water distribution loop to improve Delta T. Improving Delta T (getting higher Delta T, or temperature differential) has a direct impact on existing distribution piping size from the chiller plant. It will allow desired system performance with smaller pipe size and result in better pumping efficiency. This energy efficiency project is directly related to the Chiller Plant Expansion Project.

Project funding is needed for removing existing coils and installing new coils. Project schedule depends upon availability of funding.

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

This section is not applicable to NCDOA.

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

This section is not applicable to NCDOA.

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

### 1.4.1 Achieve High Rate of ZEV and Hybrid Adoption from Agencies

Status: Ongoing

Expected Completion Date: Ongoing

Motor Fleet Management (MFM) identified and highlighted which vehicles were suitable for Zero Emission Vehicles (ZEV) or hybrid replacement. NCDOA and the Governor's Office emphasized that the vehicles identified on the replacement list are presumed suitable for replacement with a ZEV based on collected driving data and reiterated the importance of transitioning the state's motor fleet in accordance with Executive Order 80. MFM has begun to replace identified vehicles with a hybrid or ZEV when they reach the end of their lifecycle and will continue to identify vehicles for replacement with either a ZEV or hybrid.

MFM will continue to work with agency stakeholders to educate and answer any questions about ZEV fleet adoption. Because of the new replacement process, MFM anticipates a considerable increase in EVs purchased by agencies in the next few years.

### 1.4.2 State Procurement Contract

Status: Ongoing

Expected Completion Date: Ongoing

Motor Fleet retooled the state vehicle procurement contract to secure more cost-effective ZEV and hybrid options. As a result of the new contract, the state fleet will standardize around hybrid sedans where ZEV sedans are not feasible.

All agencies and MFM will track ZEV trends and benefits of agencies transitioning to ZEVs to the extent practicable and explore methods for recognizing increased ZEV utilization among state agencies, universities, and local governments. This work will include updating the state procurement contract as appropriate to take full advantage of increasing vehicle diversity and affordability.

### 1.4.3 Mail Service Center Vehicle Update

Status: Completed

NCDOA acquired seven new Ford E-Transit cargo vans and six charging stations that transport mail between state government agencies through Mail Service Center (MSC). The electric vans are charged onsite at the MSC. When fully charged, the vans can travel up to 126 miles before needing to recharge.

Together, the vans travel 97,000 miles annually, resulting in fuel cost savings of more than \$14,000 per year. Replacing fuel-operated vehicles with electric vans will save approximately 43 metric tons of carbon dioxide equivalent on an annual basis. Additionally, the state is expected to save approximately 40% of maintenance costs compared to their gas-powered equivalents over the life of the vehicle.

1.5 Initiate other initiatives to decarbonize the transportation sector

This section is not applicable to NCDOA.

1.6 Initiate other projects aimed at reducing statewide greenhouse emissions

This section is not applicable to NCDOA.

## 2.0. Increase statewide resilience to the impacts of climate change

- 2.1 Evaluate the impacts of climate change on NC Department of Administration’s programs and operations

This section is not applicable to NCDOA.

- 2.2 Integrate climate change adaptation practices and resiliency planning into NC Department of Administration’s policies and operations

### 2.2.1 Update the North Carolina Uniform Floodplain Management Policy for State Construction

Status: Underway

Expected Completion Date: January 2024

Executive Order 266, issued July 25, 2022, establishes a schedule of 18 months. Since the floodplain policy was last updated in 1990, the frequency and intensity of hurricanes and severe storms, riverine and estuarine flooding, saltwater intrusion, and rising ground water have increased.

NCDOA will take an active part in updating the policy to include a flood risk management review process and flood resilience standards for state construction.

- 2.3 Assist the communities served by NC Department of Administration to implement climate change adaptation practices and resiliency planning

This section is not applicable to NCDOA.

- 2.4 Help complete initiatives in the Natural and Working Lands Action Plan

This section is not applicable to NCDOA.

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

This section is not applicable to NCDOA.

## 3.0. Address the public health impacts of climate change

### 3.1 Increase understanding and awareness of the health impacts of climate change

This section is not applicable to NCDOA.

### 3.2 Advance health equity

This section is not applicable to NCDOA.

### 3.3 Initiate other projects aimed at addressing the public health impacts of climate change

This section is not applicable to NCDOA.

## 4.0. Invest in historically underserved communities

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

This section is not applicable to NCDOA.

### 4.2 Create jobs and economic growth

#### 4.2.1 Increase spending by state and local governments on goods and services with historically underutilized businesses (HUB)

Status: Ongoing

Expected Completion Date: Ongoing

NCDOA uses HUB vendors whenever possible to perform project work. Examples include custodial contractors, LED lighting installation contractors, and recycling contractors.

Prioritizing HUB vendors provides opportunities to underserved communities and supports business diversity.

#### 4.2.2 Encourage HUB vendors to hire, train and retain staff from their communities

Status: Underway

Expected Completion Date: June 2026

Staffing is a metric that the NC Minority Business Development Agency (MBDA) Business Center tracks with a goal of 250 jobs both retained and created per year. In Fiscal Year 22-23 the NC MBDA Business Center reported 917 retained or created by clients. The NC MBDA Business Center has a 5-year grant, so it is expected that there will be a minimum of 1,200 jobs created or retained during that time.

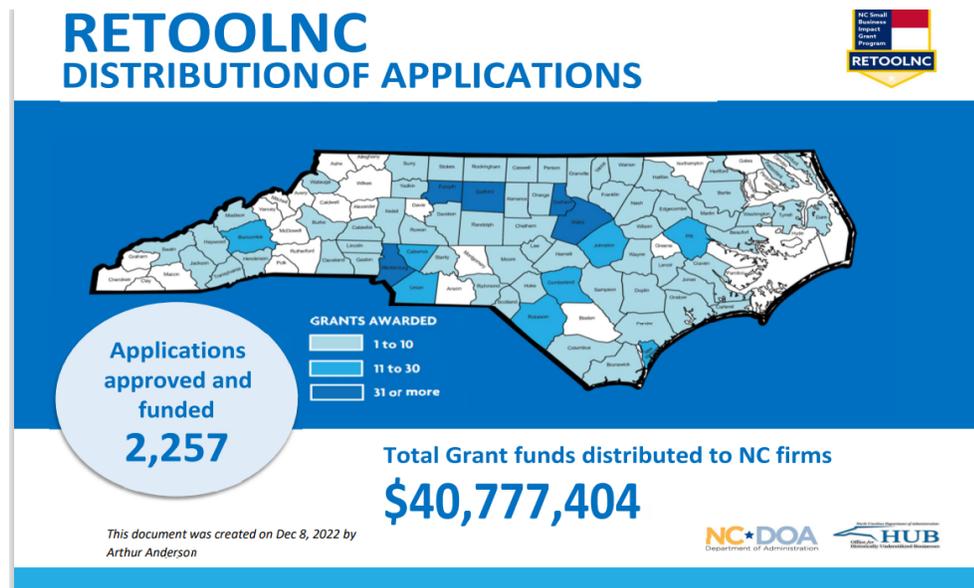
4.3 Alert residents and businesses, particularly those in underserved communities, of state and federal grant opportunities

### 4.3.1 RETOOLNC

Status: Complete

Completion Date: June 2023

The HUB Office administered the RETOOLNC grant program providing \$10,000 to \$25,000 grants per certified firm to small HUBs and Department of Transportation Disadvantaged Business Enterprises (DBEs). Over \$40 million was distributed to over 2,000 HUB and DBE certified firms. With additional funding more eligible certified HUBs and DBEs could be served.



### 4.3.2 Share Grant Funding Opportunities with HUB Vendors

Status: Ongoing

Expected Completion Date: June 2023

The HUB Office served as a resource to educate and inform HUBs of grant opportunities as part of ongoing education and training targeted at serving business needs. Grant opportunities have become very limited after ARPA funding was depleted. Current opportunities often originate from local municipalities and industry organizations and are limited in availability as compared to loan products through various banking and lending institutions. Opportunities have included office upfit programs, business plan competitions and business expansion grants.

The HUB Office will continue to share resources about funding sources and opportunities with HUBs.

### 4.3.3 Outreach For HUB Vendors and Underserved Communities

Status: Ongoing

Expected Completion Date: June 2023

Conduct outreach to HUB vendors and underserved communities through the HUBster newsletter, emails, website notices, and other avenues to inform residents and businesses of certification benefits at the local, state, and federal level as well as ways to strengthen their ability to access capital to grow their businesses. In FY 22-23 the HUB Office sponsored or supported the NC RETOOLNC grant program.

#### 4.4 Initiate other projects aimed at investing in underserved communities

#### 4.4.1 Training Programs

Status: Ongoing

Expected Completion Date: June 2023

The MBDA Business Center participated in outreach with construction companies and helping firms prequalify with prime contractors via webinar trainings and outreach events. The HUB Office collaborated with prime contractors for construction contracting and on the Bonding Education Program with the Institute's Small Business Transportation Resource Center. HUB presented over forty HUB Certification training courses. MBDA identified and partnered with six key organizations that were focused on underserved businesses. These partners were: The Winston-Salem Black Chamber of Commerce, The Greater Durham Black Chamber of Commerce, East Greensboro NOW, ProsperaUSA, Hispanic Contractors Association and the UNC Pembroke Entrepreneurship HUB. Through these partnerships, the Center provided technical assistance and business skills training, which were delivered via webinars and seminars.

#### 4.4.2 Commission and Council Representation

Status: Ongoing

Expected Completion Date: June 2023

HUB Office staff attend quarterly meetings of the NC Commission of Indian Affairs and the Governor's Advisory Council for Hispanic and Latino Affairs. The NC MBDA Business Center is working to partner with NC Council on Indian Affairs for MBDA and HUB certification efforts to increase the number of certified American Indian firms, participating in four outreach events.

#### 4.4.3 Networking Opportunities

Status: Ongoing

Expected Completion Date: June 2023

Creating opportunities for HUBs to network with prime contractors and agencies including annual MED Week networking events, meet-the-purchaser events, and the State Construction Conference Networking Reception. The HUB Office manages a Solicitation Opportunities online site, conducts live trainings for vendors on doing business with the state and ways to strengthen their businesses which were recorded so vendors can view on demand. In FY 22-23 the HUB Office sponsored or participated in events on clean energy initiatives, access to capital, business growth, marketing, networking, and how to do business with government.

#### 4.4.4 Online HUB Certification Processing

Status: Ongoing

Expected Completion Date: June 2023

HUB Office certifications for HUBs and NCSBEs went online with the upgrade of the electronic Vendor Portal (eVP) and the Interactive Purchasing System (IPS) systems to a combined eVP 2.0. This online certification will ultimately result in reducing the amount of printed material that HUB Office has been required to store.