



2022 Climate Strategy Report

NC Department of Public Safety

October 15, 2022

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Introduction

About the NC Department of Public Safety

The North Carolina Department of Public Safety (NCDPS) is the primary state agency affected by and responsible for addressing climate-related impacts to the public safety sector. NCDPS serves as the State's chief protector and defender of the public and is the statewide public safety and homeland security agency. Formed in early 2012 from the consolidation of the former departments of Corrections, Crime Control and Public Safety, and Juvenile Justice and Delinquency Prevention, NCDPS's mission is to safeguard and preserve the lives and property of the people of North Carolina through prevention, protection, and preparation with integrity and honor. As the State's largest agency, it is home to Adult Correction, Juvenile Justice and Delinquency Prevention, Alcohol Law Enforcement, Emergency Management, Governor's Crime Commission, NC National Guard, Office of Recovery and Resiliency, Private Protective Services Board/Alarm System Licensing Board, Samarcand Training Academy, State Capitol Police, and State Highway Patrol and employs more than 25,000 full time personnel and 12,000 National Guard members. It also provides administrative support to the Alcoholic Beverage Control (ABC) Commission and the State Bureau of Investigation.

The Department focuses citizen and legislative attention on law enforcement and public safety issues, such as the supervision of offenders in prison or under Community Corrections supervision, justice reinvestment, reentry planning, highway safety, crime prevention, victim services, and homeland security. Through its Emergency Management Division and Office of Recovery and Resiliency, NCDPS is also responsible for preparation for, response to, and recovery from natural and man-made disasters, as well as coordinating and providing the public face of North Carolina's resiliency efforts.

NC Department of Public Safety's Vulnerabilities to Climate Change

Climate stressors increase vulnerability and risk for North Carolina's communities, residents, emergency management services, correctional institutions, and NCDPS employee health and safety. Given the impacts of recent hurricanes, attention has been on the effects of riverine and overland flooding and storm surge, but wildfires, sea level rise, tidal flooding, extreme heat, and drought are also becoming major concerns. Sites prone to flooding and related issues for the Division of Prisons are Neuse Correctional Institution (CI), Carteret CI, and Wayne Group Home for Juvenile Justice and Delinquency Prevention; each of which has faced an operational shut down within the past four years, with the Wayne Group Home being shut down twice with substantial flood damage. Rising temperatures have also resulted in funding of over \$30 million to install air conditioning for Prisons facilities that are currently only served by heating systems.

Response to extreme weather events and disasters are a routine part of NCDPS's mission and services. Plans and protocols such as the North Carolina Emergency Operations Plan and the North Carolina Hazard Mitigation Plan already exist to outline response protocols for when the state is hit by the

natural hazards outlined in the state’s Climate Science Report. But as the frequency and severity of natural and climate disasters increase, NCDPS is focused on helping communities and residents shift their focus from response to preparedness and improving their abilities to withstand stronger hurricanes, lingering tropical storms, more intense heat waves, larger wildfires, and more.

NC Department of Public Safety’s Approach to Fulfilling the Strategies in the Climate Risk Assessment and Resilience Plan

The North Carolina Office of Recovery and Resiliency (NCORR), a division of NCDPS, has developed a system to help all state agencies understand the strategies, actions, and recommendations in the 2020 Climate Risk Assessment and Resilience Plan (Resilience Plan) that are relevant to their mission, including within NCDPS. This new organizational system will help State agencies track their progress toward fulfilling strategies in a way that facilitates updating and reporting on the Resilience Plan in future years.

Internally, NCDPS has begun integrating the recommendations in the Resilience Plan into daily workstreams, existing programs, and budget asks. NCORR, for example, has made significant progress on “Developing an online Climate Resilience Clearinghouse and Toolbox” (Resilience Plan Chapters 4 and 7, as well as in the Natural and Working Lands Action Plan. See Action 2.3.5 for details). As another example, North Carolina Emergency Management (NCEM) is expanding the focus of the State’s Enhanced Hazard Mitigation Plan to integrate climate science, more clearly address climate resilience through stated actions, and include an emphasis on “protecting, communicating with, and serving low-income populations, communities of color, older adults, and people with disabilities during and after emergencies” (Resilience Plan Chapters 4, 5, and 7). See Action 2.3.11 for details.

NCDPS is also adding new climate resilience efforts not listed in the Resilience Plan. For example, in summer 2022, NCORR collaborated with NCEM, as well as the Departments of Administration, Environmental Quality, and Transportation and the Governor’s Office in developing what became Governor Cooper’s Executive Order 266, which directs the Department of Administration to update the Uniform Floodplain Management Policy for State Construction. This effort will minimize flood damage to renovated and newly constructed state-owned assets.

Reducing Energy Use

NCDPS has had an energy manager since 2012. The current energy manager has been with NCDPS since 2017. The Division of Prisons hired an Energy and Sustainability Manager in 2020 to address renewable energy, zero emission vehicles, and other sustainability opportunities. Due to lack of bandwidth, NCDPS Energy Management had hired a temporary but long-term employee to manage our exterior LED lighting project and our current performance contract that is in the investment grade audit stage. Interns have been used over the past two years to execute the interior lighting program. Since FY 2016-2017, annual recurring avoided costs are:

- Avoided Costs ~\$1.8M

- Kwh reduction ~13.4M kwh
- Water/Sewer ~348M gals
- Emission Reductions ~13,319,110 lbs annually

Our primary focus has been LED lighting. Returns on these projects are as follows:

Division	Investment	Yearly Savings	Electrical Savings, kwh	ROI	CO ₂ emission reductions
Adult Corrections	\$3,579,800	\$882,780	13,175,950	25%	9,614,890
Correction Enterprise	\$52,782	\$11,480	165,244	21%	120,825
Highway Patrol	\$18,415	\$12,286	96,276	66%	70,396
Juvenile Justice	\$30,427	\$2,799	45,258	9%	33,092

We have already purchased over 85% and installed nearly 60% of all the exterior LED lighting fixtures needed for our facilities. We anticipate fulfilling our “LED in ’23” campaign for both interior and exterior LED lighting by the end of FY 23-23 if full funding is provided.

Funding for projects has come primarily from our Opting-Out of the energy efficiency tariff for our large electrical accounts. Additionally, NCDPS has been able to re-allocate \$1.7 million in energy and water/sewer savings over the past year towards more energy conservation measures throughout the Department. This occurred because cabinet agencies do not have a bill similar to HB 1292 which allows constituent institutions of the University of North Carolina to return 60% of their energy avoided costs back into additional energy/water efficiency projects.

NCDPS continues to aggressively pursue funding and projects—including performance contracting—to attain our targeted reduction in energy/water intensity by 2025 as identified in Section 1.0.

Addressing Environmental Injustices and Inequities

As requested by Executive Order 246, NCDPS has named its environmental justice lead, who coordinated the development of the DPS public participation plan. NCDPS has begun new initiatives to address environmental injustices inherent in its mission and observed throughout the state. For example, NCORR is integrating equity and justice into the content of an online climate resilience resource center, currently under development (See Action 2.4.5). When designing the Clearinghouse, NCORR obtained intentional input from environmental justice organizations and organizations that support people of color.

Public Participation Plan

NCDPS recognizes that all citizens of North Carolina have the right to access government services and to meaningfully contribute to government decisions. Building a more inclusive society affects and requires the participation of all North Carolinians. Outreach to and engagement with North Carolina’s residents is critical for NCDPS to be successful in meeting its mission to safeguard and preserve the lives and property of the people of North Carolina through prevention, protection, and preparation with integrity and honor. To this end, the [NCDPS Public Access and Participation Plan](#) includes the commitment to:

- Develop staff capacity to represent NCDPS to the public, and to be responsive to citizens who contact the Department seeking help;
- Continually review how the public accesses NCDPS, to promote transparency, and better enable meaningful participation; and
- Strive for continuous improvement in the areas of public access, participation, and engagement.

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

<p>1.1.1 <i>LED in '23!</i> Campaign: Completely retrofit all DPS facilities with LED lighting by FY 23-24</p>	<p>Underway</p>
<p>Expected Completion Date: FY 23-24</p> <p>FY 21-22 Successes:</p> <ul style="list-style-type: none"> • Adult Correctional Facilities: <ul style="list-style-type: none"> ○ Purchased over \$1.2 million in exterior and interior LED lighting fixtures for Adult Correction. We have now purchased over 85% and installed approximately 60% of all exterior lighting fixtures required. ○ Completed 18 Small Business Energy Savers (SBES) LED lighting projects • Samarcand Training Academy: Converted over 90% of all lighting to LED • State Highway Patrol: Purchased LED lamps to retrofit all VIPER communication tower sites • Juvenile Justice Facilities: Received ~\$1.5 million in FY 21-22 Repair and Renovation funds to fully retrofit all lights with LED • ABC Commission: Retrofitted offices with LED retrofits via the SBES program <p>FY 21-22 Targets:</p> <ul style="list-style-type: none"> • Adult Correctional Facilities: <ul style="list-style-type: none"> ○ Requesting FY 22-23 R&R Energy Efficiency funding to retrofit all remaining Adult Correction Sites (less Central Prison and Adult Correction’s six 1,000 cell facilities) ○ Complete the last remaining six projects by December 2022. 	

<ul style="list-style-type: none"> • Samarcaud Training Academy: Attain 100% LED lighting • State Highway Patrol: Install LED lamps for all VIPER communication tower sites • Juvenile Justice: Execute five SBES projects by December 2022ABC Commission: Retrofit the warehouse with LED lighting via the SBES program 	
1.1.2 Run the <i>BMS: Fix in '26!</i> Campaign	Underway
<p>Expected Completion Date: FY 26-27</p> <p>Convert all sites to a common Niagara based building management system (BMS) platform, implement data analytics and begin on-going commissioning of these systems to reduce energy use on-site.</p> <p>FY 21-22 Successes:</p> <ul style="list-style-type: none"> • Adult Correctional Facilities: <ul style="list-style-type: none"> ○ Purchased all necessary controls and hardware for Johnston Correctional Institution ○ Integrated the North Carolina Correctional Institution for Women (NCCIW) Segregation Chiller into BMS Niagara standard ○ Integrated Granville CI maximum security lockup unit into BMS Niagara standard ○ Integrated Central Prison disparate systems to BMS Niagara standard ○ Awarded contract for Nash Correctional Institution BMS upfits at Heating Plant, C Dorm, and Food Services • Juvenile Justice Facilities: Obtained funding for BMS upfits at three sites: Cabarrus, Lenoir and Edgecombe Youth Development Centers (YDCs) <p>FY 21-22 Targets:</p> <ul style="list-style-type: none"> • Adult Correctional Facilities: <ul style="list-style-type: none"> ○ Develop BMS graphic interface standard for Johnston Correctional Institution ○ Implement BMS analytics at two sites ○ Contract Warren Correctional Institution Phase I BMS upfit ○ Obtain Repair and Renovation Energy Efficiency Funding for six sites • Juvenile Justice Facilities: Contract three BMS upfits at sites noted above 	
1.1.3 Use performance contracting to reduce on-site energy use	Underway
<p>Expected Completion Date: FY 26-27</p> <p>FY 21-22 Successes:</p> <ul style="list-style-type: none"> • Adult Correctional Facilities: <ul style="list-style-type: none"> ○ Signed a Performance Contract agreement for six 1,000-cell facilities investment grade audits <p>FY 21-22 Targets:</p> <ul style="list-style-type: none"> • Adult Correctional Facilities: <ul style="list-style-type: none"> ○ Sign a Performance Contract for a 1,000-cell facilities investment grade audit to include full LED lighting, water efficiency and management systems, BMS 	

<p>upfits and other efficiency opportunities, as long as the investment makes financial sense</p> <ul style="list-style-type: none"> ○ Begin testing the waters for a performance contract at Central Prison 	
<p>1.1.4 Update water management systems at adult correctional facilities</p>	<p>Underway</p>
<p>Expected Completion Date: FY 28-29</p> <p>FY 21-22 Successes:</p> <ul style="list-style-type: none"> ● Received ~\$12.6 million in Repair and Renovation Energy Efficiency Funding for three water management systems and leak repairs (Nash, Roanoke River and Piedmont Correctional Institution) ● Purchased materials for pilot water management installations at Pender and Foothills Correctional Institution <p>FY 21-22 Targets:</p> <ul style="list-style-type: none"> ● Award Designs for three above noted projects ● Begin testing the waters for a performance contract for high water use sites ● Complete pilot water management installations at Pender and Foothills Correctional Institution ● Execute six other water management pilot projects at various facilities 	
<p>1.1.5 Increase energy efficiency at NC National Guard Facilities</p>	<p>Underway</p>
<p>The NC National Guard, through State of North Carolina and Department of Defense initiatives, has made significant strides in designing and constructing energy efficient facilities. The NC National Guard has constructed 50,150 square feet of high performance and energy efficient building system, which also meets LEED Silver standards for sustainability. Additionally, the Guard is currently constructing 62,217 square feet of facilities meeting the same standards. The organization has implemented ASHRAE energy audits as a tool to target energy reduction. The Guard has implemented targeted energy efficiencies project for existing facilities such as: high efficiency boilers, energy efficient HVAC systems, installed building automation systems within seven facilities, and retrofitted 222,474 square-feet with LED lighting. Due to the opportunity to develop new facilities, the National Guard retired 14 facilities, consisting of 223,029 square-feet. These aged facilities were constructed more than 50 years ago and did not meet the organization’s energy efficiency goals.</p> <p>The National Guard will construct 114,044 square feet and initiate planning and design of 55,000 square feet of high performance and energy efficient facilities. The National Guard will renovate 35,581 square feet to implement an energy efficient building system and continue targeting energy efficiency projects throughout its facilities.</p>	

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

1.2.1 Install solar power at adult correctional facilities	Underway
<p>Expected Completion Date: TBD</p> <p>FY 21-22 Successes:</p> <ul style="list-style-type: none"> • Adult Correctional Facilities: <ul style="list-style-type: none"> ○ Successfully evaluated and narrowed down list of potential solar sites ○ Included solar thermal and photovoltaics as option for 1,000-cell facilities' performance contract <p>FY 21-22 Targets:</p> <ul style="list-style-type: none"> • Confirm if there is a viable site for solar • Consider potential for grants/incentives under the Inflation Reduction Act program 	

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.

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

1.4.1 Convert vehicles to clean diesel	Underway
<p>Expected Completion Date: FY 24-25</p> <p>FY 21-22 Successes:</p> <ul style="list-style-type: none"> • NCDPS was awarded ~\$4.1 million for ~30 clean diesel shuttle buses (Volkswagen Settlement Phase II) • Applied for a ~\$3.8 million grant for heavy equipment clean diesel replacements and charging infrastructure (Volkswagen Settlement Phase II) <p>FY 22-23 Targets:</p> <ul style="list-style-type: none"> • Purchase at least 10 shuttle buses and decommission all vehicles involved in VW grant 	
1.4.2 Convert vehicles to ZEVs	Underway
<p>Expected Completion Date: FY 29-30</p> <p>FY 21-22 Successes:</p> <ul style="list-style-type: none"> • Installed Level II charging stations at Columbia Correctional Institution and (VW Settlement Phase II) 	

<ul style="list-style-type: none"> • Purchased 10 Level II recharging stations • Central Engineering has completed plans for Central Prison and NC Correctional Institution for Women • Currently no vehicles have been purchased <p>FY 21-22 Targets:</p> <ul style="list-style-type: none"> • Successfully apply for electric recharging stations for NC Correctional Institution for Women and the Randall Building • Complete additional Level II charging station designs

1.5 Initiate other projects aimed at reducing statewide greenhouse emissions

1.5.1 Obtain Natural Heritage Land Dedication for correctional facility lands	Underway
<p>Expected Completion Date: FY 29-30</p> <p>FY 21-22 Successes:</p> <ul style="list-style-type: none"> • Received Natural Heritage Land Dedication for Robeson Correctional Center <p>FY 22-23 Targets:</p> <ul style="list-style-type: none"> • Obtain Natural Heritage Land Dedications for seven additional sites (NC Correctional Institution for Women, Granville Correctional Institution, Roanoke River Correctional Institution, and Johnston Correctional Institution, Carteret and Franklin Correction Center and Samarcand Training Academy) • Survey Pamlico Correctional Institution for Natural Heritage Landed Dedication • Hire summer intern for 2023 to support this effort • Pilot native grass installation at Roanoke River Farm 	

2.0. Increase statewide resilience to the impacts of climate change

2.1 Evaluate the impacts of climate change on cabinet agencies’ programs and operations

2.1.1 Conduct a vulnerability assessment of facilities within the Division of Adult Corrections	Underway
<p>Expected Completion Date: December 2024</p> <p>Funding in the amount of \$3 million was approved to begin Phase I of a Comprehensive Facility Strategy for our Prison Facilities. The funding is an initial step of a \$25 million effort to develop an operational strategy and model for the prison system. It will include a vulnerability review</p>	

as part of Facility Condition Index for all Prison locations. The Condition Index will be coupled with operational data to determine the most efficient usage of all resources for the custody management of inmates.	
2.1.2 Conduct a vulnerability assessment of National Guard facilities and relocate buildings as needed	Underway
<p>Expected Completion Date: January 2040</p> <p>The NC National Guard is shifting to a “Hub and Spoke” model of a few large Regional Readiness Centers with a network of smaller Readiness Centers surrounding them strategically. The Guard’s Construction and Facility Maintenance Office is applying data on sea level rise and other resilience information to determine which current facilities are not sustainable given current climate projections. With that information, the Guard will prioritize new construction projects and decide what properties can be retired. This process is expected to be ongoing over a period of decades as Congress makes more funds available to re-envision how the National Guard operates from a structural standpoint. Climate resilience will always be a critical element of decision making.</p>	

2.2 Integrate climate change adaptation practices and resiliency planning into cabinet agencies’ policies and operations

2.2.1 Coordinate state agencies’ annual Climate Strategy Reports	Ongoing
<p>Expected Completion Date: Annually: October 2022</p> <p>In 2022, the Governor’s Office issued a memo requesting that all state agencies annually report their progress on implementing the actions in the 2020 Climate Risk Assessment and Resilience Plan, Executive Order 80, and Executive Order 246 in one report – the Climate Strategy Report, due each October. Previously State agencies reported progress on the Resilience Plan and Executive Order 80 in separate documents; this is the first time State agencies will report on Executive Order 246, announced in January 2022.</p> <p>NCORR, in partnership with the NC Department of Environmental Quality (NCDEQ), developed a template and created a process for each agency to submit their accomplishments to the Governor’s Office, the NC Climate Change Interagency Council, and the public. NCORR will continue coordinating and advising state agencies on this reporting process in 2023.</p>	
2.2.2 Facilitate a stream management and flooding reduction working group	Ongoing
<p>Expected Completion Date: N/A</p> <p>NCORR has established an intergovernmental working group comprising representatives from the Departments of Environmental Quality, Transportation, Agriculture and Consumer Services, and Natural and Cultural Resources, among others and is conducting outreach to other stakeholders outside of state government to recruit for membership. NCORR has submitted two reports to the Joint Legislative Commission on Governmental Operations and</p>	

the Fiscal Research Division regarding the findings and recommendations of the working group.

Thus far, the working group has identified several issues for further discussion and recommendation, including (among others):

- The need for restricting development in the floodplain and expanding the requirements for floodproofing.
- The need for land conservation along the coast and within floodplains, and the need to reinstate NC’s land conservation tax credit to incentivize keeping people and development out of areas vulnerable to flooding.

The need for ongoing outreach and education regarding what can be accomplished through various flood reduction methods to improve public and private decision making. Over the course of the next 12 months, the working group will further refine and develop these and other recommendations for the legislature. In the short term, the working group intends to focus its efforts on analyzing the 2021 Flood Resilience Study by the UNC Policy Collaboratory, which was submitted to the state legislature.

2.2.3 Facilitate interagency communication on resilience topics projects	Ongoing
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Expected Completion Date: N/A

NCORR facilitates the Interagency Resilience Team (IRT), as called for in Chapter 7 of the 2020 Climate Risk Assessment and Resilience Plan, to provide a structure for State staff to coordinate resilience projects and to support the development of annual Climate Strategy Reports. The IRT includes at least one resilience lead from each state cabinet agency, as well as the Department of Agriculture and Consumer Affairs and the Wildlife Resources Commission. This team meets monthly.

2.2.4 Facilitate the State Disaster Recovery Task Force to coordinate efforts and advise state government as needed on recovery and resilience	Ongoing
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Expected Completion Date: N/A

NCORR manages the State Disaster Recovery Task Force (SDRTF), which supports and advises state agencies as they address long-term recovery and undertake resilience-building initiatives statewide. The SDRTF is made up of 12 committees called Recovery Support Functions (RSFs). Since the start of this year, the Environmental Preservation RSF has held several meetings to update members on ongoing resilience efforts across state agencies, including rainfall modeling and data gathering, local capacity building, and nature-based flood reduction planning efforts for which NCDEQ has received funding through NCORR’s Community Development Block Grant Mitigation (CDBG-MIT) program.

The Nonprofit and Volunteerism RSF worked on its first set of recommendations on improving diversity, equity, and inclusivity in disaster recovery and resilience. Two overarching themes of the recommendation document are to strengthen relationships between North Carolina Emergency Management and nonprofits with strong ties to Black and Latino populations, and to allocate disaster resources in a way that reduces equity gaps. The Housing RSF discussed

<p>how the American Rescue Plan Act programs can work together to support North Carolina residents to obtain and stay in safe, secure, and affordable housing across income spectrums. Housing instability and housing cost burden are strong drivers of household-level vulnerability to climate change. NCORR has made significant strides toward implementing the recommendation of the Housing RSF to increase production of affordable, accessible housing by leveraging CDBG-DR funds. For more details, see Section 4.1.</p>	
<p>2.2.5 Support the development of an update to the NC Uniform Floodplain Management Policy for State Construction</p>	<p>Underway</p>
<p>Expected Completion Date: December 2023</p> <p>NCORR, in partnership with NCEM and the Department of Administration (DOA), worked with the Governor’s Office to develop Executive Order 266, which Governor Cooper signed in July. The new EO directs DOA to update the state’s requirements for construction on state land subject to flooding. A direct outgrowth of NCORR’s work with the Interagency Resilience Team, the EO will result in increased resilience for state assets by both updating the requirements for such construction (which requirements had last been updated in 1990) and by expanding the scope of projects subject to such requirements by implementing a flood risk management process beyond application of the previous 100-year floodplain standard.</p> <p>Over the next 12 months, NCORR will assist DOA with developing the new requirements and flood risk management standard. EO 266 provides an 18-month deadline for DOA’s adoption of the new policy.</p>	

2.3 Assist the communities served by each cabinet agency to implement climate change adaptation practices and resiliency planning

<p>2.3.1 Make it easier for residents to identify their hurricane evacuation route</p>	<p>Complete</p>
<p>Completion Date: 2020</p> <p>In 2020, North Carolina Emergency Management launched the Know your Zone initiative to make it easier for residents to know their hurricane evacuation route. Predetermined zones were established in the twenty coastal counties to simplify the evacuation process during an emergency. In addition to a user-friendly look up tool that allows individuals to identify their evacuation zone based on location, this initiative provides updated hurricane preparedness guides and an updated digital toolkit to improve personal preparedness and resiliency efforts.</p>	
<p>2.3.2 Conduct building vulnerability assessments and identify mitigation strategies for areas impacted by riverine flooding from Hurricanes Matthew and Florence</p>	<p>Complete</p>
<p>Completion Date: Fall 2022</p>	

<p>In 2020, North Carolina Emergency Management began a building level risk assessment and mitigation strategy development process for approximately 12,000 square miles of unstudied streams heavily impacted by riverine flooding from Hurricanes Matthew and Florence. Flood risk analyses and building level flood damages and mitigation alternatives assessments were completed in the Summer of 2022 and NCEM recently launched the NCEM Advisory Flood Data viewer (https://flood.nc.gov/advisoryflood/) to disseminate study reports, flood analyses boundaries and building-level risk assessment data to local communities, state agencies and the public.</p>	
<p>2.3.3 Conduct flood mitigation studies</p>	<p>Underway</p>
<p>Expected Completion Date: Fall 2022</p> <p>In 2020, North Carolina Emergency Management initiated new flood mitigation studies for the Northeast Cape Fear River, Cape Fear River, Little River, and Cashier River Basins. NCEM completed flood and mitigation alternatives analyses in the Summer of 2022 in in the process of completing final reports for the project. Final reports will be complete and loaded to the Rebuild NC website (https://www.rebuild.nc.gov/resiliency/river-basin-studies) to share with the public in the Fall of 2022.</p>	
<p>2.3.4 Begin administering the Building Resilient Infrastructure and Communities program</p>	<p>Ongoing</p>
<p>Expected Completion Date: N/A</p> <p>In 2020, the federal government released its pre-disaster mitigation program, Building Resilient Infrastructure and Communities (BRIC). North Carolina Emergency Management launched BRIC, which aims to shift the focus away from reactive disaster spending and toward research-supported, proactive investment in community resilience. In the 2020 BRIC application, 32 projects were submitted for the competitive evaluation by FEMA and 5 were selected for award worth approximately \$30M. The State is currently waiting for these projects to receive an award letter and begin work. In the 2021 BRIC application, 49 projects totaling approximately \$167M were submitted for the competitive evaluation by FEMA. FEMA review of all submitted projects is ongoing with expected notification date of selection in July 21.</p>	
<p>2.3.5 Develop an online resilience resource center for local governments and community leaders</p>	<p>Underway</p>
<p>Expected Completion Date: December 2023</p> <p>NCORR, in partnership with the Department of Environmental Quality and several North Carolina environmental nonprofits and universities, has hired a consultant to begin the initial stages of developing an online climate resilience clearinghouse for local governments and community leaders. The tool is called for in the 2020 North Carolina Climate Risk Assessment and Resilience Plan (2020 Plan) and in the North Carolina Natural and Working Lands Action Plan. The resource will “point users to relevant climate data and best practices for building resilience in an equitable way” (p. 7-15, 2020 Plan). The project is supported by funding from the US Climate Alliance.</p>	

In the next 12 months, NCORR and its partners will complete the initial design phase of the project and begin building the website.	
2.3.6 Purchase homes in the floodplain	Underway
<p>Expected Completion Date: April 2026</p> <p>NCORR administers the ReBuild NC Strategic Buyout Program, which is a voluntary program that purchases properties that are at-risk for flooding and turns them into deed-restricted greenspace. The Strategic Buyout Program engages closely with local governments and communities to identify contiguous areas that are good fits for the program, and the program offers generous financial incentives to encourage applicants to move to places that are less at-risk for flooding. The program has received 230 applications since the program opened in January 2020 and has received 23 applications since March 2022. The program has undergone significant streamlining efforts in the last several months, which has resulted in a 937% increase in movement toward project completion. The program made its first three offers to applicants in July 2022. For the next 12 months, the program expects to onboard state staff to facilitate applicant progression, begin purchasing homes, and expand to additional areas. NCORR intends to continue to identify areas in which the program can be simplified and will be making additional changes throughout the next year.</p>	
2.3.7 Repair and elevate storm-damaged homes	Ongoing
<p>Expected Completion Date: N/A</p> <p>NCORR administers the ReBuild NC Homeowner Recovery Program, North Carolina’s long-term disaster recovery program, to repair and elevate storm-damaged homes. Between March and August 2022, NCORR completed 35 repair and elevation projects despite facing challenges from the nationwide material delays, labor shortages and a significant increase in material pricing. Those 35 projects consist of manufactured housing replacements, reconstruction of single-family residences and rehabilitation of single-family residences.</p> <p>Since March 2022, NCORR has made a series of enhancements to the Rebuild program. NCORR transitioned from a construction management vendor to a state-run residential construction management program. In addition to the overhaul of construction management, NCORR has begun to post procurements to the State’s Interactive Purchasing System. Due to these changes, NCORR expects to complete over 200 manufactured home replacements and reconstruction, rehabilitation, and elevation projects by the end of December 2022. ReBuild NC is made possible through U.S. Department of Housing and Urban Development Community Development Block Grant – Disaster Recovery and Community Development Block Grant – Mitigation funding.</p>	
2.3.8 Support nine regions in the eastern half of the state to complete climate vulnerability assessments and develop implementation pathways for 5-10 priority projects	Underway
<p>Expected Completion Date: December 2022</p> <p>Since the program’s launch in fall 2021, NCORR, in partnership with NC Rural Center, has continued working with consultants and local stakeholders to develop a vulnerability</p>	

assessment and a portfolio of five to 10 regional resilience projects in each of the nine multi-county regions. As of September 2022, all nine vulnerability assessments have received public comments and are in the final stages of completion. In addition, all nine regions have developed a draft list of projects that are under review by local stakeholders. Over the next three months, NCORR will work with project partners to develop an implementation pathway for each resilience project, to include a project lead, potential funding opportunities, implementation steps, and more. By December 2022, both documents– the vulnerability assessment and the portfolio of projects – in each region will be finalized and released the public. In early 2023, NCORR will work with each region to submit one project to the Duke Energy Foundation for full or partial funding. The Duke Energy Foundation has committed \$600,000 total to aid the implementation of the RISE Regional Resilience Portfolios.

The project is part of the Regions Innovating for Strong Economies and Environment (RISE) program, which aims to address the need for local capacity building around long-term disaster recovery and resilience planning and implementation. RISE is part of the North Carolina Resilience Communities program, run in partnership with the Department of Environmental Quality. Funding from the Economic Development Administration and US Department of Housing and Urban Development supports this project.

<p>2.3.9 Work with local governments impacted by Hurricane Matthew to restore damaged critical infrastructure</p>	<p>Underway</p>
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Expected Completion Date: August 2024

NCORR’s Infrastructure Program is currently developing community infrastructure projects in Bladen, Duplin, Hyde, and Robeson Counties, the City of Lumberton, and in the Towns of St. Paul’s and Princeville. These projects include a range of critical infrastructure and technical assistance for subrecipient projects as varied as drainage studies, stormwater drainage, development of potable water sources, sewer improvements, demolition of dangerous building ruins, and rehabilitation of buildings to be used for critical community services. Additionally, the Infrastructure Program is lending assistance in the construction of infrastructure to build flood-safe communities, most notably in the Town of Princeville, and is currently monitoring the development and construction of a homeless-services building in the City of Fayetteville, which is forecasted to be completed in the early summer of 2023.

During the past year, the program has assisted subrecipients in completing the construction of stormwater infrastructure in Nash County and the ongoing, aforementioned facility in Fayetteville, assisted subrecipients with procurement of nine architectural-engineering firms for design of infrastructure improvements, and closely followed the completion of a county-wide stormwater drainage study that includes hydrological and hydraulic calculations that will inform the county as they develop feasible and cost-effective designs to address extensive stormwater drainage problem throughout the county.

Over the next 12 months, the program’s subrecipients plan to construct approximately 15 projects. The program is closely monitoring contracted scoping tasks and accompanying timelines for design, and is proactively advising subrecipients on next steps, leading toward construction and successful completion.

2.3.10 Develop a climate resilience planning guide for local leaders	Underway
<p>Expected Completion Date: December 2022</p> <p>NCORR is working with a consultant to develop a resilient communities planning guide for North Carolina’s local governments. The guide will empower local and regional leaders to understand their climate vulnerabilities and develop shared priorities for action. The guide will have two components: A playbook and an idea book. The playbook will guide users through the process of building a team, analyzing vulnerabilities and assets, brainstorming, prioritizing actions, and identifying implementation steps. The idea book will provide examples of projects, programs, and policies that improve resilience across social, economic, and environmental domains. The planning guide is supported by funding from the Economic Development Administration. It is being developed as a component of RISE in conjunction with the North Carolina Resilience Communities program, run in partnership with the Department of Environmental Quality. Both components of the guide should be released in 2022.</p>	
2.3.11 Account for climate change in the State Hazard Mitigation Plan	Underway
<p>Expected Completion Date: Fall 2022</p> <p>Ensure the Enhanced State Hazard Mitigation Plan includes an emphasis on addressing the projected impacts of climate change and on protecting, communicating with, and serving marginalized populations</p> <p>NCEM has integrated climate change and the North Carolina Climate Risk Assessment and Resilience Plan (Resilience Plan) into the Enhanced State Hazard Mitigation Plan update to the extent feasible. New FEMA guidance comes into play in April of 2023 that includes specific considerations for climate change in the risk analysis as well as an expansion of outreach to underserved populations. Current update is expected to be completed and approved before the new guidance comes into play, but NCEM did, at the suggestion of the Resilience Plan, begin to address some specific impacts of climate change in the hazard analysis, specifically in regard to heat and flooding, addressing anticipated changes in frequency/intensity of drought and flood conditions and the impacts of same on wildfire and landslide hazards.</p> <p>NCEM put the draft up for public comment from September 22 to October 14, 2022.</p>	

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

2.4.1 Conduct a dam breach analysis on intermediate and high hazard dams	Underway
<p>Expected Completion Date: Spring 2023</p> <p>In 2020, North Carolina Emergency Management began conducting dam breach analyses on the remaining 859 intermediate and high hazard dams in North Carolina that currently do not have dam failure inundation boundaries or building and road risk information. The agency is developing rainfall runoff hydrological modeling for 287 dams, installing gauges to monitor for</p>	

dam failure at 130 critical state and locally owned dams, and integrating all data into a secure monitoring, alert, and warning system. NCEM has completed analysis of all intermediate and high hazard dams and this information was loaded into the State Emergency Response Application (SERA) and the dam warning and alert application. NCEM has also completed rainfall runoff modeling for 287 dam and has loaded this data into the dam alert and monitoring software. Finally, NCDEQ Dam Safety has secured long-term funding for annual software fees to continue the dam alert and warning application.

NCEM has recently awarded a contract to install 34 remaining ultrasonic water level sensors and anticipates having these installed by early 2023. Also, NCEM plans to award a contract to install 29 remaining pressure transducer water level gauges at dams and install those by early spring 2023. These water level gauges will be integrated into the dam alert and warning application once installation is complete.

2.4.2 Improve data collection at sites where flooding is common

Complete

Completion Date: Fall 2022

To improve the data collection capabilities of the State Emergency Response Team, North Carolina Emergency Management purchased and is installing river gauges at 71 additional sites statewide and updated flood inundation libraries and risk assessments for these additional sites beginning in 2020. NCEM completed installing these 71 new radar gauges in May of 2022 and all data was loaded to and is being shared through the Flood Inundation Mapping and Alert Network (FIMAN) application (<https://fiman.nc.gov/>).

2.4.3 Pilot a flood insurance program

Underway

Expected Completion Date: TBD

The North Carolina Office of Recovery and Resiliency and North Carolina Emergency Management are working towards piloting a flood insurance program. The initiative is in the process of being integrated into the existing ReBuild NC Homeowner Recovery Program supporting communities significantly impacted by Hurricanes Matthew and Florence.

At this time, NCORR continues to refine program policies, procedures, and system of record business requirements. NCORR has discussed flood insurance purchase requirements with FEMA and NFIP generally and as it relates to newly constructed structures. Flood insurance policies cannot be transferred from building-to-building, but rather are transferred from owner-to-owner. Hence, an eligible applicant’s existing flood insurance policy on the old structure would need to be cancelled and a new flood insurance policy would need to be purchased for the new replacement structure. NCORR was informed by FEMA that two-year flood insurance policies may not be pre-purchased, and it takes 30-days for a flood insurance policy to be in effect. NCORR is developing procedures with all of FEMA’s requirements in mind to ensure there are no lapses in flood insurance for eligible applicants. NCORR is also reviewing FEMA’s risk rating for North Carolina as that impacts flood insurance premiums.

The National Flood Insurance Program (NFIP) State Coordinator (NCEM) facilitated a meeting on June 14, 2022, between NCORR and FEMA Region IV Flood Insurance Liaison to discuss providing NCORR with direct access to NFIP Insurance Data.

<p>2.4.4 Support the update and modeling of NC climate impacts, local capacity building, and planning for nature-based solutions to flooding impacts</p>	<p>Ongoing</p>
<p>Expected Completion Date: N/A</p> <p>Through its administration of the Community Development Block Grant - Mitigation program, NCORR is funding several planning efforts by other state agencies that increase statewide resilience to climate change impacts. These projects update the state’s data and modeling of climate impacts including rainfall and drought, build local capacity to design solutions to climate vulnerabilities, and develop a natural infrastructure flood mitigation program. Thus far, NCORR has entered into four funding agreements with the Department of Environmental Quality (NCDEQ) and one with the Department of Transportation (NCDOT) to support these important efforts:</p> <ul style="list-style-type: none"> • <i>NC Resilient Coastal Communities Program</i>. DEQ, Division of Coastal Management. \$500,000 CDBG-MIT. • <i>Statewide Probable Maximum Precipitation Study</i>. DEQ, Division of Energy, Mineral, and Land Resources. \$500,000 CDBG-MIT. • <i>Low Flow Statistics Re-Evaluation and Public Water Supply Boundary Area Assessment</i>. DEQ, Division of Water Resources. \$740,700 CDBG-MIT. • <i>Development of the Natural Infrastructure Flood Mitigation Program and Modeling of Nature-Based Solutions for Flooding</i>. DEQ, Division of Mitigation Services. \$340,800 CDBG-MIT. • <i>Updating the Precipitation Frequency Estimates for North Carolina, NOAA Atlas 14, DOT</i>, \$237,120 CDBG-MIT <p>Over the next year, NCORR will continue to partner with NCDEQ and NCDOT to monitor progress on these efforts. NCORR is also in the process of entering into a similar agreement with the State Climate Office, NC State University, to fund a project to incorporate climate data into the state’s precipitation statistics and create a publicly available, user-friendly interface for this information.</p>	

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.

3.2 Advance health equity

This section is not applicable.

4.0. Invest in historically underserved communities

4.1 Increase affordability for low- and moderate-income households

<p>4.1.1 Create an affordable housing strategy in partnership with the UNC Development Finance Initiative</p>	<p>Underway</p>
<p>Expected Completion Date: October 2022</p> <p>NCORR has leveraged the experience of the UNC Development Finance Initiative to build a strategy for the development and preservation of rental housing in the 23 counties most impacted and distressed by Hurricanes Matthew and Florence. The planning study has identified the types of affordable and resilient housing, including multi-family dwellings, single family homes, and other housing types most needed by those counties. Further, the study evaluates the availability of suitable properties, the development community’s capacity, and the financial feasibility of the housing types needed. The plan is intended to inform the allocation of recovery funds through NCORR’s affordable housing development fund to create new affordable housing that is safer, more resilient, and better matched with the needs of each impacted area. The bulk of the analysis, completed in June 2022, includes final strategic recommendations and tools. The final written report is expected in October 2022. In addition, NCORR will use the planning data to produce county-specific analysis and reporting for each of the 23 counties by March 2023.</p>	
<p>4.1.2 Fund more than 1,000 new affordable housing units in regions hit by Hurricanes Matthew and Florence</p>	<p>Underway</p>
<p>Expected Completion Date: December 2026</p> <p>To address this commitment made by NCORR in 2021, approximately \$65.9 million of the state’s Community Development Block Grant–Disaster Recovery funds are being used to partner with housing agencies across the most impacted and distressed counties to increase safe, affordable housing opportunities for low-to-moderate income households. Currently, NCORR and the NC Housing Finance Agency (NCHFA) are using \$40 million through Round 1 of the Affordable Housing Development Fund to assist with tax credit funding during a time of unprecedented construction cost increases. Over half of these projects have now received environmental review approvals. Five Points Crossing in Rocky Mount held an initial groundbreaking ceremony in June 2022.</p> <p>NCORR and NCHFA are also using \$28.6 million for the predecessor program to the Affordable Housing Development Fund, the Multifamily Development Fund, on three projects that include 194 units. McArthur Park, an 80-unit development in Cumberland County, has recently finished construction and occupancy. Environmental review processes and construction progress will continue in the months to come.</p> <p>The Public Housing Restoration Fund Program continues to assist projects with the Wilson Housing Authority and the Housing Authority of the City of Lumberton with \$9.6 million in funding. The Eatmon Townhomes project in Wilson held a ribbon cutting ceremony and plans to begin occupancy soon. These projects were designed to replace 106 low-income apartments</p>	

<p>on new land that will keep the residents safe from future floods. The Lumberton housing project is nearing completion of the design phase and plans to bid construction in January 2025 with the goal of having low-income families in safe, affordable housing by December 2025. An additional \$14.5 million has been dedicated to four new Public Housing applications that are currently undergoing reviews and contract agreements. These projects will add or repair 127 additional units in Princeville, Wilmington, Fayetteville, and Lumberton.</p>	
<p>4.1.3 Launch the Affordable Housing Development Fund</p>	<p>Underway</p>
<p>Expected Completion Date: June 2023</p> <p>Through Round 1 of the Affordable Development Fund, NCORR worked with the North Carolina Housing Finance Agency to fund 11 tax credit projects.</p> <p>Seeing a need within the local government and tax credit development community for funding on approved 4% tax credit projects, NCORR implemented Round 2 in a manner specifically designed for filling gaps on 4% tax credit projects. The application process for Round 2 funding closed September 16. Awards of approximately \$20 million will be made in October 2022.</p> <p>NCORR has begun planning Round 3 funding, which is still slated for deployment in Summer 2023. The fund will focus on large-scale, multifamily rental units; one to four family rental and home ownership dwellings; and rehabilitating single-family and multi-family homes. NCORR anticipates Round 3 will include various methods of approaching affordable housing gaps in areas affected by Hurricanes Matthew and Florence.</p>	

4.2 Create jobs and economic growth

This section is not applicable.

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

This section is not applicable.