



NC DHHS Resilience Strategy Report

March 1, 2021

Background

Due to pervasive systemic injustices, historically marginalized populations too often live in environments that jeopardize their health and well-being. For decades, the same policies and pollutants that we now recognize as causing climate change have been wreaking havoc on communities of color, resulting in higher rates of asthma, heart disease, cancer, and other preventable diseases. At the Department of Health and Human Services, we have used our position to communicate the disparate health impacts of climate change and a need to increase access to healthcare, resources, and support for those most affected, as described below. We are committed to creating lasting systemic change.

NCDHHS advanced the goals of EO80 and leveraged its expertise in environmental health to focus on climate change impacts on children into the state's Early Childhood Action Plan. Further, an [article](#) in the *North Carolina Medical Journal* promoted the health benefits of a NC transition to clean energy. Another example is establishing local partnerships and developing a strong climate and health adaptation program (Building Resilience Against Climate Effects, or BRACE)! We have been a state leader in climate change and health for many years, and we are using our platform to make a stand about climate justice and focus on turning planning into equitable actions for our citizens.

Nowhere in recent memory has the impact of these inequities been more evident and more urgent than in the current pandemic. Historically marginalized populations have been disproportionately impacted by COVID-19, made worse by the higher prevalence of diseases, such as diabetes, cancer, and chronic obstructive pulmonary disease (COPD), that increase the risk of serious illness. With this data in hand, DHHS has led its COVID-19 response with an intentional focus on historically marginalized populations, thereby addressing both the health impacts of environmental injustice and building a stronger framework for engaging with historically marginalized communities beyond the pandemic. We continue to build trust by engaging local leaders to guide our policies and practices, investing in partners on the ground, and using culturally and linguistically appropriate partnerships and strategies.

While climate resilience work continues, the Department's primary responsibility is COVID-19 pandemic response and ensuring equitable access to vaccines. Once the spread of COVID-19 is effectively curtailed, the work of pandemic recovery will be priority. Attention to the needs of historically marginalized populations that were disproportionately impacted by COVID-19, both physically and economically will be essential to achieving equitable recovery. Aligning hazard mitigation, the transition to clean energy, and job creation in renewable energy industries should be fundamental approaches to recovery. The Department needs all its interagency partners' support pandemic response and recovery while addressing the imminent threats from climate change.

State Agency Resilience Strategy Report

This report contains our overall approach, main health topics to be addressed, critical vulnerabilities and impacts, resilience strategies (underway and new), and climate justice. Infectious disease tracking and pandemic response will continue to be the main focus for DHHS in 2021.

The 2020 Plan's Sector Approach

The 2020 Plan took a sector-based approach to analyzing climate hazards and agency vulnerabilities and then identifying strategies for addressing the risks posed by climate change, as instructed by DEQ and NOAA. DHHS additionally utilizes CDC framework and its long history in public health coalition building to plan for climate change, as well as meeting internally with the DHHS Climate Resilience Workgroup.

Topics to be Addressed

The topics that are the foci of the report are COVID-19, climate justice, children's health, adaptation work, and flooding.

Critical Vulnerabilities and Impacts

The critical vulnerabilities to communities due to the impacts of COVID-19 are at the forefront of our work. Impacts to children, heat-related illness, wildland fires, and flooding continue to be among the most pressing vulnerabilities and impacts.

Resilience Strategies

Previously Identified Resilience Strategies Underway or Completed

Disseminating Climate, Health, Equity, and Clean Energy Education to the Medical Community

The Division of Public Health Occupational and Environmental Epidemiology Branch published an [article](#) in the *North Carolina Medical Journal* promoting the health benefits of a NC transition to clean energy. The article highlighted the NC Clean Energy Plan as creating jobs and a healthy environment, emphasizing improvements in air quality would reduce health risks for individuals with cardiovascular disease and respiratory conditions like asthma, potentially seeing health benefits valued at 1.58-4.15 cents/kilowatt hour. The article also promoted using solar installations to improve community resilience to extreme weather events and energy needs related to increasing heat.

Demonstrating Climate, Health, and Equity Impacts on Early Childhood Development

NC DHHS is drafting an addendum to the [Early Childhood Action Plan](#), focused on how to mitigate the impacts of climate change on children aged 0-8. Through a partnership with the UNC School of Public Health, NC DHHS completed a literature review and is developing an action plan as part of the addendum.

Without aggressive mitigation efforts, climate change will lead economic, social, and environmental effects that pose risks to health and social wellbeing of children, presenting challenges to collective efforts to meet current Early Childhood Action Plan goals and protect future generations from the devastation of an uninhabitable planet. As a prosperous state in the world's most vibrant economy, North Carolina must be a key leader in mitigating climate change. With vast wind and solar potential, NC is poised to lead the nation in renewable energy generation.

Children in low-income and historically marginalized communities will be most affected by climate

change. Experts in children’s environmental health warn that COVID-19 is a preview of what climate change could bring in the absence of immediate, drastic action: erosion of resources; deepening of health, social, and economic disparities; lengthy school closures; and more.

Engaging Partners with Climate and Health Data

The NC Division of Public Health completed an internal pilot of an Environmental Health Data Dashboard, based on the framework for CDC’s Environmental Public Health Tracking Network. The dashboard includes environmental exposure and health outcome data including, chemical releases, private well water, childhood lead poisoning, and carbon monoxide poisonings. We are incorporating critical climate change indicators including flooding, air quality and population demographics important to climate justice, such as race and socioeconomic status. Upon completion, this tool will be publicly accessible in late 2021 for communities to explore the numerous relationships among environment, communities, and health.

Climate and Health Adaptation Work using CDC BRACE Framework

The NC Division of Public Health Occupational and Environmental Epidemiology Branch continued Building Resilience Against Climate Effects (BRACE) adaptation work in counties most impacted by climate change, including wildland fire elementary education in Hoke County and heat-health alert systems in Bladen, Robeson, and Scotland counties during 2020.

We are currently preparing to reapply for CDC BRACE funding, with current funding ending in August 2021. We are planning for future work on climate justice and flooding, building on a flooding and health survey in Sampson County (over a dozen interviews conducted and analyzed).

BRACE staff also presented on the impact of climate on health to a variety of audiences, including the NC Museum of Life and Science, Southern Regional Area Health Education Center Climate Symposium, and the International Smoke Symposium.

NC Clean Energy Plan Implementation

The Division of Medical Assistance expanded reimbursement for clinical services delivered via telehealth greatly reducing transportation burdens on patients accessing health care.

NC DHHS instituted teleworking as part of the pandemic response, which has dramatically reduced earth warming air pollution. Building energy costs and vehicle miles traveled for commute and work trips, as well as all forms of travel, have been dramatically reduced. The entire DHHS staff is working remotely as much as possible.

NC DHHS implemented electronic document transfers (DocuSign) leading to significant reduction in paper use and associated carbon emissions.

New Resilience Strategies Identified

Responding to the Global COVID-19 Pandemic Using an Equity Lens

For decades, the same policies, practices and pollutants that we now recognize as causing climate change have been wreaking havoc on communities of color, resulting in higher rates of asthma, heart disease, cancer, and other preventable diseases. At the Department of Health and Human Services, we have used our position to raise the alarm on the disparate health impacts of climate change; provide healthcare, resources, and support to those most affected; and create lasting systemic change. *How we respond to the COVID pandemic will shape disparities in climate change exposures in the future.*

The Southeast region of the state sees heat-related illness from existing high temperatures, energy poverty, and outdoor or uncooled work, including a large migrant farmworker population. This region has also experienced meat processing plant outbreaks, and experiences vulnerability to flooding and hurricane impacts, in recent years hit by both Hurricanes Florence and Matthew. There are communities across the state that are living with climate vulnerabilities, great vulnerability to COVID, and the two threats can exacerbate each other.

Obtain Future CDC BRACE Funding for Climate and Health Work

Currently the majority of NC DHHS funding for climate and health work is provided by the CDC Building Resilience Against Climate Effects (BRACE) program to the NC Division of Public Health Occupational and Environmental Epidemiology, which is set to end in August 2021. We are currently preparing to reapply for CDC BRACE funding, which ends in August 2021. We are planning for future work on climate justice and flooding, building on a flooding and health survey in Sampson County (over a dozen interviews conducted and analyzed).

Describing Health Impacts of Harmful Algal Blooms

Increasing water temperatures and rising nutrient loads in water bodies can contribute to harmful algal blooms, which will have long-term impacts on water quality and usability in NC. To improve harmful algal bloom education and outreach, we propose the establishment of a harmful algal bloom health tracking program within the Climate and Health program in NC Division of Public Health Occupational and Environmental Epidemiology. This would enable NC to 1) Understand the health effects experienced by North Carolinians exposed to harmful algal blooms 2) Observe potential patterns and trends in harmful algal bloom exposures and 3) Focus and develop education and community outreach materials that can be targeted to populations most at risk for experiencing health effects from harmful algal bloom exposures.

Black River Flooding Forecast

We were recently approached by the National Weather Service regarding a river flood forecast for the Black River. The River Forecast Center in Atlanta would monitor the river, and the NWS would issue a warning 3-4 days in advance of potential flooding. The Center believes that the Black River would be an ideal forecast point because the basin appears to be large enough to simulate water flow with their model, and there is a gauge at the Black River Tomahawk. The River Forecast Center would need to research the Black River to confirm that simulation is possible, and local officials support this effort to proceed.

Prioritization, Challenges, and Timeline

The agency's foremost priority is responding to the COVID-19 pandemic. The health equity aspects of this response may serve as a catalyst for future climate justice work, though challenges to protecting communities from the inequitable ravages of COVID-19 remain. DHHS will continue responding to the COVID-19 pandemic and continue climate and health adaptation work in 2021. We will also prioritize reapplication for funding from the CDC BRACE program to continue supporting climate and health efforts.

Climate and Environmental Justice

Responding to the Global COVID-19 Pandemic Using Equity Lens

- Policies and pollutants causing climate change resulting in higher rates of asthma, heart

disease, cancer, and other preventable diseases.

- DHHS serves as the lead agency for the COVID-19 pandemic and uses a [data driven approach](#) to [address](#) the inequitable impacts we see from COVID-19. *How we respond to the COVID-19 pandemic will shape disparities in climate change exposures in the future.*
- DHHS provided increased social and behavioral supports across communities during COVID-19 response.
- Providing unprecedented health guidance to protect a wide array of North Carolinians early in the pandemic, DHHS created a COVID-19 workgroup focusing on historically marginalized populations that included internal DHHS and external partners from community groups, advocacy organizations, health care providers and academic institutions.
- DHHS intends to use the lessons learned in this crisis as a framework for how we engage with historically marginalized communities beyond the pandemic. This will include how we approach communities with our environmental health and climate change related work.

Climate Risk Assessment & Resilience Plan 2020 Strategies

The 2020 plan strategies are focused largely on climate justice, as this is the work of health and human services (and climate resilience). These strategies include: addressing existing toxic exposures in low-income communities and communities of color, providing information on minimizing effects of moisture and mold, incentivizing housing integration and reducing substandard housing and increasing access to cooling, increasing social and behavioral health support in vulnerable communities, expanding tracking of epidemiological health impacts of climate change in NC, increasing investment in Back@Home disaster recovery rapid rehousing initiative, and offering adequate social services support to North Carolinians navigating government processes during disaster recovery.

Early Childhood Action Plan

We expanded NC DHHS Early Childhood Action Plan by addressing Environmental and Climate Justice and their respective impact on children. This work is ongoing.

Climate Justice, Equity, and Ongoing Toxic Exposures

The Division of Public Environmental Health Section, Occupational and Environmental Epidemiology Branch, and Health Office of Minority Health continued conversations and worked to build resilience in the context of addressing existing toxic exposures, such as hazardous waste in water or homes, in low-income communities and communities of color. These existing exposures must be addressed in climate justice work.

The Environmental Health Data Dashboard could be the tool needed to identify these exposures. Environmental exposures disproportionately impact communities of color and economically struggling communities. Having more data available publicly on environmental health outcomes by race, ethnicity, and income will improve public understanding, provide evidence to communities struggling with environmental justice issues, and be used as a tool for NCDHHS to further investigate these disproportionate impacts. The Environmental Health Data Dashboard will house data on climate related issues such as flooding and storm damage, heat-related illness, vector-borne illness, and wildfire smoke, chemical exposures in air, water, and soil, and related health outcomes such as asthma and cancer.

Seeking Additional Support

We continue to educate on benefits of additional support for DHHS programs: Building Resilience

Against Climate Effects (BRACE) program, Back@Home program, mold and moisture education, and infectious disease tracking. Additional funding for infectious disease tracking has been obtained for COVID-19.

Climate and Health Adaptation BRACE Projects

The Division of Public Health continued adaptation projects in heat-related illness surveillance, heat-health alert systems, and wildland fire elementary education in the Sandhills region, a region with a diverse population including tribes, black communities, farmworkers, many Spanish speakers, and other important groups.

Disaster Response Efforts

We continue response to disasters, as DHHS addresses the impact and provides staff in a variety of public services. This includes the lead agency role and responsibilities of the COVID-19 pandemic, and also can include response to a variety of weather and climate disasters that require an equity lens during response.

Nature-Based Solutions to Resiliency

Many nature-based solutions exist to improve climate and health equity, including giving land back to tribal organizations that have vast knowledge in this area. Giving land to tribes would both deliver justice and be an important use of nature-based solutions to resiliency, as tribes have knowledge housed for millennia on how to best manage land and resources and protect the community from changes in weather and climate. Solutions also may include increasing tree health to reduce the impact of heat and providing improved housing to citizens that make use of nature-based solutions.

Next Steps

Actionable items to continue this work include responding to the COVID-19 pandemic; obtaining Building Resilience Against Climate Effects (BRACE) future funding to support work on flooding and health, harmful algal blooms, and climate justice; providing local climate and health adaptation support; and sustaining telework to the extent possible.