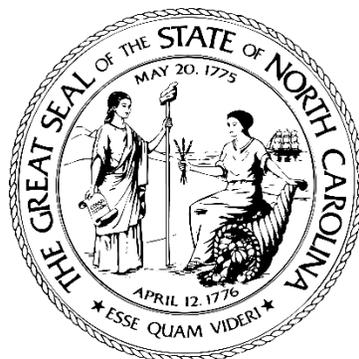




Executive Order 80: 2020 Status Report

January 2021



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I. Department of Environmental Quality

A. Message from the Secretary / Chair of Interagency Climate Change Council

Overview

In 2020, the agencies representing the Climate Change Interagency Council have worked to continue efforts that we initiated in 2019 to understand climate change impacts and build resilience in our operations, policies, and programs. This work proceeded in the face of a global pandemic that made working in person more difficult and impacted our approach to conducting field work, providing education, developing work products and assisting the public, while putting stress on both our staff and our partners. The success of this year is not only measured in our work products but also our ability to overcome challenges.

Along with the pandemic, North Carolina was once again impacted by weather related events. Hurricane Isaias, downgraded to a tropical storm after it made landfall in North Carolina, brought heavy rain and strong winds to our coast. Several additional significant rain events resulting from the very active hurricane season impacting other states also affected our state. Specifically, remnants of Tropical Storm Eta caused widespread flooding across the state, including the overtopping of an inactive coal ash basin. These events reinforce and highlight that even if North Carolina may not be directly impacted by a storm event, the second and third order residual effects of these storms and the changing climate still have a significant impact on our state's natural and built infrastructure.

Despite the challenges of this year, the DEQ staff and state agencies accomplished a great deal.

- The North Carolina Climate Science Report (NCCSR), commissioned by the Council and led by the Institute of Climate Studies, was published this year as an element of the 2020 NC Risk Assessment and Resilience Plan. The NCCSR incorporates input from North Carolina's expert scientific community, and provides an overview of the physical science, detailed information on observed and projected changes in temperature and precipitation averages and extremes, hurricanes, sea level, and other relevant climate metrics for use by planners and decision makers.
- We collaborated with state agency staff, community representatives, and natural and working lands experts from across the state to deliver the North Carolina Climate Risk Assessment and Resilience Plan.
- We worked with partners and stakeholders to implement several recommendations from the Clean Energy Plan, including carbon and clean energy policy designs, energy regulatory processes, and new energy efficiency programs for low and moderate income households.
- We rolled out electric vehicles and infrastructure programs including state agency purchases of electric/hybrid vehicles, funding the purchase of community electric/hybrid school and transit buses and funding installation of charging stations.
- State agencies and facility managers developed the Comprehensive Utility Use Conservation Program and Plans to further reduce energy consumption at government buildings and facilities as mandated by Section 8 of Executive Order 80. These plans were developed as a collaborative effort with all cabinet agencies and led by the Department of Environmental Quality State Energy Program.
- We have contracted a consultant to conduct an Offshore Wind Energy Supply Chain and Infrastructure Assessment in response to the NC Clean Energy Plan Recommendation H3. The assessment was completed in late 2020.

- We received \$4 million in a grant from the Coronavirus Aid, Relief, and Economic Security (CARES) Act, passed in March of 2020, to fund and implement low-income energy efficiency projects.
- We enhanced many existing programs in DEQ and other state agencies to increase our mitigation of greenhouse gases (GHGs) and build climate change resilience.
- Lastly, we have considered lessons learned from partner US Climate Alliance states and recommendations from federal agencies to develop programs and policies that will best serve our communities.

COVID-19 Impacts

Much of 2020 was impacted by the Coronavirus pandemic (COVID-19). Many state workers had to pivot their work flows, using teleworking, staggering work schedules, practicing social distancing and increasing disinfection. Many of our employees also faced challenges outside of work, including economic and health problems. Despite these difficulties, state agencies working on EO80 goals were able, for the most part, to continue both planning and implementing recommendations related to climate change. This, in and of itself, is one of our biggest accomplishments.

North Carolina responded to hurricane, earthquake and flooding events in this year. The combined risk of an extreme weather event combined with the challenges of a global pandemic had to be solved “on the fly”. North Carolina’s emergency responders and state and local planners have a chance to reexamine long-held approaches to emergency management and resilience in light of these events.

Looking more broadly, COVID-19 challenged how everyone in the state lives, socializes, and conducts business. It required us to pivot very quickly to new methods and thought processes to keep people safe. Many people rapidly worked toward solutions, however, we also learned that leadership, communication, and funding only go so far. COVID-19 exposed inequities that exist in our marginalized communities, the same groups that are on the frontline of climate related impacts.

Equity Considerations

A key goal of EO80 is to ensure that mitigation of GHGs and building resilience does not aggravate existing inequities within our society. Our agencies have been working with local stakeholders, community leaders, non-government organizations, local government officials, and NC councils of government to both educate officials on resilience and develop programs that best serve communities. The NC Resilient Communities Program led by the North Carolina Office of Recovery and Resiliency (NCORR) and DEQ’s Division of Coastal Resources will help communities become stronger and better equipped to withstand the impacts of future natural disasters such as hurricanes, floods and wildfires, as well as the ongoing effects of climate change. This and other programs by cabinet agencies will be implemented to ensure that vulnerable and disenfranchised populations are not left behind as the state moves toward climate resilience. Our agencies have made it a priority to develop programs and policies that serve all communities, and consider community voices in the decision-making and regulatory process.

North Carolina Risk Assessment and Resilience Plan

One of our greatest accomplishments this year was the release of the North Carolina Climate Risk Assessment and Resilience Plan (2020 Resilience Plan).¹ Extensive participation by each agency under Governor Cooper, as well as the Department of Agriculture and Consumer Services, led to the development of plans for climate resilience through a series of meetings and workshops over 2019 and 2020. The work was led by DEQ under the guidance of federal and state climate change experts, and

¹ <https://deq.nc.gov/energy-climate/climate-change/nc-climate-change-interagency-council/climate-change-clean-energy-17>

supported by almost two hundred authors and contributors. The 2020 Resilience Plan, which was originally due in March, was not released until June due to the COVID-19 pandemic. Each participating state agency reviewed climate science data for North Carolina, evaluated the agency's and public's exposure to climate-related hazards, assessed the state's vulnerability and risks to the identified hazards, and identified actions to build resilience.

The 2020 Resilience Plan includes two important appendices facilitated by DEQ. Appendix A is the North Carolina Climate Science Report.² The report is a multi-agency, peer-reviewed, scientific assessment of historical climate trends and potential future climate change in North Carolina under increased GHG concentrations. Appendix B is the North Carolina Natural and Working Lands Action Plan.³ The plan, developed by close to 100 experts over the course of two years, includes 25 priority recommendations for natural and working lands to sequester carbon, build ecosystem and community resilience, provide ecosystem benefits, and enhance our economy.

Implementation of the 2020 Resilience Plan is being led by the North Carolina Office of Recovery and Resilience (NCORR). Through collaborative efforts between state and local governments, NCORR will guide the development and delivery of agency work products over the next four years. Resilience work has already started at many of the agencies. Key efforts include the following:

- Working with state agencies on their resilience strategies, which will be finalized by March 2021;
- Convening a dedicated Interagency Resilience Team to work on cross-sector resilience strategies; and
- Establishing the NC Resilient Communities program to provide training, expertise, and funding to local government and communities.

Interagency Council Meetings

The North Carolina Climate Change Interagency Council held two meetings in 2020. The first was held on January 22, 2020 in Raleigh, and the second was held virtually on October 1, 2020, in compliance with guidelines to prevent the spread of COVID-19. The January meeting detailed the findings of the 2020 NC Climate Science Report developed by the NC Institute for Climate Studies and provided an update on the development of the forthcoming NC Climate Risk Assessment and Resilience Plan. The October Council meeting described the key findings of the NC Climate Risk Assessment and Resilience Plan and outlined the Path Forward for the future of climate resilience in the state of North Carolina.

The key topics which arose during the public comment section of each NC Interagency Climate Council meeting are outlined in Figure 1 below. For detailed agendas and video recordings of all Climate Change Interagency Council meetings, please visit: <https://deq.nc.gov/energy-climate/climate-change/nc-climate-change-interagency-council>.

² <https://files.nc.gov/ncdeq/climate-change/resilience-plan/Appendix-A-NC-Climate-Science-Report.pdf>

³ <https://deq.nc.gov/energy-climate/climate-change/nc-climate-change-interagency-council/climate-change-clean-energy-17>

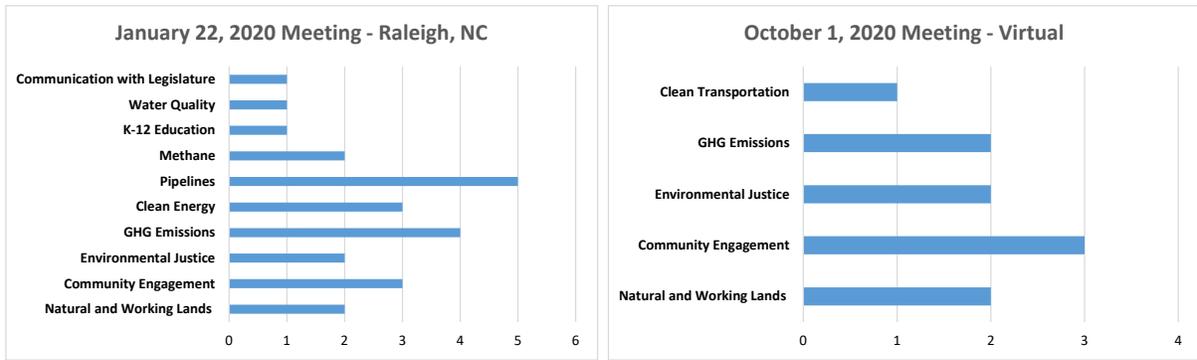


Figure 1. Public Comments Received by Topic

The cabinet agencies, working together through the Climate Change Interagency Council, have taken important steps in achieving the goals of EO80. While there is much work to be done, North Carolina better understands the challenges and is better prepared to address and respond to climate change impacts and resilience than in years past.

Secretary,

Michael S. Regan

B. DEQ Climate Mitigation and Economic Development Activities

Table A-1: DEQ Actions Related to Climate Mitigation

Category	Summary of Initiative / Accomplishments	Division/Program Office
Education / Outreach	The N.C. Air Awareness program participated in 90 education and outreach events in which staff shared information about EO80, climate change, and electric vehicles reaching over 3,600 people while encouraging specific actions to improve air quality and the environment. This effort included teaching 770 driver's education High School students about electric vehicles and encouraging positive behavior changes for new drivers which would also reduce harmful air pollution.	Division of Air Quality / Planning / NC Air Awareness
	The Division of Air Quality is also increasing its communication and reach to teachers through online workshops in the upcoming year, including new micro-grid activities for k-12 students which will further share EO80 related information with NC citizens.	Division of Air Quality / Planning / NC Air Awareness
	The Environmental Stewardship Initiative (ESI) program promotes and supports businesses and organizations to implement environmental management systems (EMS) modeled after the ISO 14001 standard, which pushes organizations to incorporate sustainability and resiliency into their strategic business planning and core business functions. An EMS includes the development of goals to reduce energy, water and resource consumption, as well as to generate less waste. It also asks organizations to consider not only how they affect the environment but also how the environment can affect them, such as through climate change impacts. The ESI program offered a high-level overview training on the ISO 14001 EMS standard virtually to 29 participants during four webinar sessions in 2020. The program will also offer six in-depth ISO 14001 training module classes in the Fall of 2020. Seven organizations took advantage of the free auditing and gap analysis services since the Fall of 2019.	Division of Environmental Assistance and Customer Service
	The Environmental Stewardship Initiative (ESI) offers benchmarking events hosted by members where their goals regarding energy and water usage reduction as well as waste generation reductions and other goals are discussed and shared with members and other interested organizations. We also partner with other organizations to provide educational opportunities on relevant topics that may be hosted at member sites as well. Historically, these events have been in-person educational opportunities. However, due to the COVID-19 pandemic the program transitioned to providing virtual content. Since October 2019 we have	Division of Environmental Assistance and Customer Service

Category	Summary of Initiative / Accomplishments	Division/Program Office
	<p>provided the following webinar events in conjunction with our partners including the Land of Sky Regional Council, DEQ Waste Reduction Partners, Advanced Energy and NC Green Travel that reached a total of 262 attendees. ·</p> <ul style="list-style-type: none"> Energy Saving Strategies during COVID-19 - incentives and energy management resources from NC utility providers Controlling Utility Costs during COVID-19: NC Hospitality and Tourism Managing Energy During Curtailment and Shutdown – for NC manufacturers Managing Energy during Facility Shutdowns – for Public Facilities ISO 50001 Ready (Dept. of Energy program related to international energy mgt. standard) <p>We also provided content regarding energy conservation, water and waste reduction strategies during the virtual ESI Annual Conference in the Fall of 2020 that reached 137 registrants. Looking forward we will continue this EMS focus and hope to expand our membership base and service offerings. ISO 50001 is becoming more widely adopted, along with zero waste to landfill, resiliency and circular economy strategies. We hope to be able to provide these services in order for NC organizations to operate in a more efficient and optimized way enabling them to provide gainful employment, stable tax bases, robust communities and healthy ecosystem foundations.</p>	
	<p>DEQ Public Affairs staff have discussed with a researcher on development of a video about the challenges climate change brings to fisheries management. Due to COVID-19 restrictions, the project has been delayed but the division anticipates trying to achieve this goal in the future.</p>	<p>Division of Marine Fisheries</p>
	<p>In 2019 two Erosion and Sedimentation Control Design Workshops were conducted for design professionals, with a total of 255 participants. A wide range of experts presented on common E&SC issues and about solutions based on innovative design and solid research. State and local program representatives provided updates on the latest regulatory changes and approaches to successful plan approval. And vendors had the latest products on hand to demonstrate options that can help achieve cost-effective compliance.</p>	<p>Energy, Mineral, and Land Resources / Erosion & Sedimentation Control Program</p>
	<p>In 2019 an annual workshop was conducted for the delegated local erosion and sediment control programs to train local government staff in erosion and sediment control related issues. Representatives from 45 of the 54 local governments participated in the workshop with a total of 102 participants. State representatives provided updates on the latest regulatory changes, various experts presented on related erosion and sedimentation control topics including planting native, RECPs & HECPPs, beneficial fill, forestry inspections and research updates from NCSU’s Erosion Field Lab. The workshop also provides an</p>	<p>Energy, Mineral, and Land Resources / Erosion & Sedimentation Control Program</p>

Category	Summary of Initiative / Accomplishments	Division/Program Office
	<p>opportunity for local programs to connect, learn from each other, and share challenges, strategies and successes of managing erosion and sediment throughout the state. An awards program was conducted at the annual workshop to recognize local governments that excel in erosion and sedimentation control efforts. Plaque presentations were made to two local program winners, Lincoln County and Chatham County.</p>	
	<p>In 2019 the Sediment Education Specialist exhibited at and distributed educational materials at the NC Association of Soil & Water Conservation Districts 75th Annual Meeting & Expo, at the NC SciREN-Triangle and Educator Open House and at the Bridging the Gap – NC STEM Educators Conference. The Sediment Education Specialist participated in four career days; did eight school visits, often teaching multiple classes per visit; and participated in six other environmental education events. One tool often brought to these education outreach events is the Enviroscope, a watershed model that is used to demonstrate point and non-point source pollution, which is a great visual for teaching about water pollution.</p>	<p>Energy, Mineral, and Land Resources / Erosion & Sedimentation Control Program</p>
<p>NC Clean Energy Plan Implementation</p>	<p>SEO is currently leading the CEP Recommendation B-1 stakeholder process to design policies that align regulatory incentives and processes with public policy goals, customer expectations, utility needs, and technology innovation. Policies include performance-based rates, retirement of uneconomic assets, wholesale electricity markets and competitive procurement. To date, seven workshops have been held and workgroups are currently meeting on a bi-weekly basis to develop legislative language, fact sheets, and guidance documents to support advancing these policies.</p>	<p>State Energy Office</p>
	<p>SEO is acting as a stakeholder for the CEP Recommendation A-1 report being led by Duke University’s Nicholas Institute that evaluates, designs, and recommends specific carbon-reduction policies for the electricity sector. To date the effort has focused on obtaining stakeholder feedback on the designs, assumptions, and results of electricity sector modeling of the base case and each policy case. The policy cases include accelerated coal retirements, market-based carbon reduction program, clean energy policies, and a combination of these strategies.</p>	<p>State Energy Office</p>
	<p>On March 27, 2020, the federal Coronavirus Aid, Relief, and Economic Security (CARES) Act was signed into law. As such, the North Carolina Department of Health and Human Services (NCDHHS) received some of North Carolina’s funding allocations to disperse for the Low Income Energy Assistance Program (LIEAP). The LIEAP is a federally funded program that assists eligible low-income households with their heating and cooling costs, bill payment, energy crises, and weatherization. The NCDHHS dispersed approximately 4 million dollars to the DEQ’s SEO in an interagency effort to support the LIEAP program and CEP initiatives. In coordination with energy providers, universities, and non-profit</p>	<p>State Energy Office</p>

Category	Summary of Initiative / Accomplishments	Division/Program Office
	<p>organizations, the SEO led an effort to obtain list of projects that would assist the program while also meeting CEP I and J objectives. To date, the SEO assisted project sponsors through the contractual process and provided technical expertise to obtain the grant funding. The projects target items such as energy efficiency retrofits, energy education, equipment upgrades, weatherization, and the incorporation of renewable energy technologies for low-income households.</p>	
	<p>SEO is currently initiating efforts related to CEP recommendation J: Foster a Just Transition to Clean Energy. Thus far, this has entailed exploring energy education, training, and employment models that create opportunities for communities of color, rural communities, and other populations that are at risk of being left behind in the clean energy transition. Efforts have also included identifying just transition goals relevant to the SEO, such as energy justice, as well as researching other state’s models for just transition. SEO continues to participate in the US Climate Alliance’s Just Transition workgroup, which has developed definitions for just transition and shared guiding principles.</p> <p>SEO is also leading efforts on CEP recommendation J-2: launch an energy efficiency apprenticeship program within Apprenticeship NC to expand access to clean energy careers. Partnering with NC A&T University, SEO is developing a pilot apprenticeship program focused on energy efficiency jobs to be deployed at several local community colleges and to be later expanded state-wide. To date, efforts have included identifying and initiating conversations with stakeholders, identifying apprenticeship models and target occupations, and developing a pilot program.</p>	State Energy Office
	<p>The Division of Air Quality is starting revisions to the North Carolina Greenhouse Gas (GHG) Emissions Inventory Report during the fall of 2020. The focus will be on updating emissions for the largest sources of GHG emissions for which historical activity data have been published since the previous report was prepared.</p>	Division of Air Quality / Planning / Attainment Planning
	<p>The Weatherization Assistance Program (WAP) has launched its low-income community solar pilot program in partnership with Roanoke Electric Cooperative, Blue Ridge Energy and Fayetteville Public Works Commission. WAP will be purchasing subscriptions for low-income customers of municipal and cooperative utilities with community solar programs. In the coming year, WAP hopes to collaborate with utilities to expand the program to additional regions of the state.</p>	State Energy Office

Category	Summary of Initiative / Accomplishments	Division/Program Office
NC ZEV Plan Implementation	<p>Using Volkswagen Settlement funds, the Division of Air Quality (DAQ) awarded funding for electric school and transit buses in addition to light duty electric charging stations as summarized below.</p> <p><u>School Bus Program:</u> DAQ awarded funding for the purchase of six electric school buses for deployment in six counties in North Carolina. During the initial stakeholder consultation for developing North Carolina’s VW mitigation plan, 5% of the available funds for Phase 1 were allocated to school bus electrification. The NC Department of Public Instruction plans a pilot program with five of the six electric buses while the sixth bus was awarded to the Eastern Band of Cherokees.</p> <p><u>Transit Program:</u> DAQ awarded funding for the purchase of nine electric transit buses and 2 hybrid electric transit buses. Funding was awarded for transit buses to several regional and local transportation authorities and one for a university electric shuttle bus.</p> <p><u>DC Fast Program:</u> DAQ award funding for the purchase and installation of 33 light duty electric vehicle charging stations along priority corridors across the state. The charging kilowatt (kW) capacity of the selected projects range from a low of 50kW to a high of 200kW, most of the projects selected are of 62kW capacity. Once the projects are completed a total of 50 charging ports that will be added to the state EV charging network.</p>	Division of Air Quality / Technical Services / Mobile Source Compliance
Agency Building Utility Consumption Reduction (EO80 Section 8)	<p>The Utility Savings Initiative (USI) is leading the effort to encourage State-owned buildings to collectively reduce energy consumption per square foot by at least 40 percent of fiscal year (FY) 2002-2003 levels by 2025. In addition, the Utility Savings Initiative encourages and assists, upon request, the UNC System, K-12 schools, and local governments in reducing energy consumption. The USI program annually updates the <i>Comprehensive Energy, Water, and Utility Use Conservation Program</i> to provide strategies that assist State-owned buildings in reducing energy consumption to meet the 40 percent goal. During the FY 2019-2020 annual reporting cycle for cabinet agencies, the USI program requested an inventory of funded and unfunded projects that would assist in meeting the energy reduction goals required by the directive. The results provided valuable information that guided planning efforts and allowed the office to suggest robust strategies to further reduce energy consumption in future years for cabinet agencies.</p>	State Energy Office – Utility Savings Initiative

Category	Summary of Initiative / Accomplishments	Division/Program Office
	<p>The USI program provides preliminary audits, project evaluations, and implements strategy assistance to meet the EO80 goals. The program also reviews utility bills and encourages participants to engage in current programs to reduce energy consumption. A core component of the USI program provides relevant energy efficiency training to local and State government facility managers. This training includes the Energy Management Diploma series (through the NCSU Office of Professional Development), the creation of an Agency Utility Management Plan, analyses of utility bills, and conducts classes on building systems and programs to increase efficiency.</p>	<p>State Energy Office – Utility Savings Initiative</p>
	<p>The USI program strongly encourages that all energy managers conduct regularly scheduled meetings with colleagues to share best practices and opportunities for energy savings. The USI program leads by example since it schedules monthly teleconference meetings with cabinet agency energy managers to have subject-matter experts from the public and private sectors discuss tested approaches that may assist in meeting EO80 goals. Specifically, the meetings provide the necessary tools and training to increase energy efficiency, promote sustainability, and reduce operating costs with current State budgetary constraints. Since the USI program was proactive in utilizing remote teleconferencing services prior to the COVID-19 pandemic, there were no significant interruptions to communications with cabinet agencies regarding energy projects or educational affairs.</p>	<p>State Energy Office – Utility Savings Initiative</p>
	<p>Due to strong communication, technical, and customer service initiatives, the USI program received 100 percent of utility usage reports from State agencies, the University of North Carolina System, and community colleges for FY 2019-2020. The collective results for FY 2019-2020 indicate that while gross square footage increased by 551,214 (0.3 percent), utility expenditures decreased by \$20.57 million (6 %) since EO80 became effective on October 29, 2018. In addition, cabinet agencies played their part and reduced utility expenditures by \$7.17 million (7%).</p>	<p>State Energy Office – Utility Savings Initiative</p>
	<p>The Division continues to work with DEQ Facilities Manager on replacing lighting at division headquarters and South River facilities with more efficient LED lighting. This may result in a repairs and renovation fund request.</p>	<p>Division of Marine Fisheries</p>
<p>Other Conservation and Efficiency Initiatives</p>	<p>As infrastructure needs and funding dictates, the Division of Air Quality is purchasing new, modern, more energy efficient ambient monitoring shelters capable of withstanding winds in excess of 140 mph. These shelters will reduce energy consumption and consequently reduce the CO2 (greenhouse gas) emitted by electric generating facilities as well. Two such shelters were purchased in early 2020 and were put into service during the fall of 2020.</p>	<p>Division of Air Quality / Ambient Monitoring</p>

Category	Summary of Initiative / Accomplishments	Division/Program Office
	<p>DMS contracted 8 compensatory mitigation projects that will restore or enhance 81/161 linear feet of stream and 177 acres of wetland.</p> <p>Reduction of Methane-Producing Organic Waste Disposal and Increase of Carbon Sequestration through the Application of Finished Compost: DEACS works with stakeholders including private businesses, local governments and higher education institutions to reduce the amount of food waste and organics entering North Carolina landfills by encouraging less generation of waste in the first place, donation of edible food, and composting of inedible food scraps. These efforts help reduce the amount of methane generation and facilitate increased carbon sequestration through the application of finished compost.</p> <p>Additionally, DEACS enhances the state’s growing organic waste recycling economy by connecting producers and consumers of compost products, helping businesses and local governments grow their recycling capacity, and demonstrating why NC is the ideal place to establish new green enterprises.</p> <p>DEACS Waste Reduction Partner program, working in a funding partnership with the State Energy Office, provides no-cost energy efficiency assessments to any business or institution requesting assistance. Last year, the program provided energy assessments to 43 organizations helping to reduce energy use by 32,614 MMBtu, cut CO2e emissions by 3,149 metric tons which had net annual cost savings to these businesses of \$562,000.</p>	<p>Division of Mitigation Services (DMS)</p> <p>Division of Environmental Assistance and Customer Services</p>

C. DEQ Climate Resilience Activities

a. Hazard Identification, Vulnerability Assessments, and/or Resilience Actions Taken Since October 15, 2019 (*Chapter 5 of the Climate Risk Assessment and Resilience Plan & Element 2 of the North Carolina Resilience Strategy*)

Table A-2: DEQ Actions Related to Hazard Identification, Vulnerability Assessments, and/or Resilience

Initiative Title	Description	Division/Lead Program Office
Better Buildings Sustainable Wastewater Infrastructure Accelerator	The SWIFt Accelerator works with water resource recovery facilities to accelerate a pathway toward sustainable infrastructure. SWIFt aims to catalyze the adoption of innovative and best-practice approaches in data management, advanced technologies, and financing for infrastructure improvement. Partners seek to improve the energy efficiency of their participating water resource recovery facilities by at least 25% and integrate at least one resource recovery measure. The program is open to municipal, private, commercial, and industrial facilities. DEQ staff is in the process of recruiting facilities to participate in the program.	State Energy Office – Utility Savings Initiative
Initial Assessment of Climate Change Impacts to CCMP Implementation	During fall 2019, APNEP staff conducted a climate change vulnerability assessment to determine the risks from relevant climate stressors to implementation of APNEP’s Comprehensive Conservation and Management Plan (CCMP) actions. Identifying risks associated with climate change and managing them to reduce their impacts is essential for implementation of the CCMP actions. The CCMP was developed with the potential impacts of a changing climate in mind, thus the reassessment was a way to confirm and update APNEP’s perception of risks to implementation of the CCMP actions.	Albemarle-Pamlico National Estuary Partnership (APNEP)
Economic Evaluation of Submerged Aquatic Vegetation within in the Albemarle-Pamlico Watershed	An economic analysis of Submerged Aquatic Vegetation (SAV) in the Albemarle-Pamlico watershed. The project will address critical data gaps identified since the 2016 APNEP study by estimating economic values directly related to ecosystem services provided by SAV within the coastal zone. SAV provides nonmarket benefits, that is, while SAV provides economic value, its services are not always priced in a market. To establish a complete value for SAV requires the use of nonmarket valuation techniques, which are used to monetize four categories of nonmarket benefits: provisioning, regulating, cultural, and supporting services. Within each category, SAV may provide more than one service.	Albemarle-Pamlico National Estuary Partnership (APNEP)
CAMA Access Grants	The Division of Coastal Management awards approximately \$1 million annually to local governments through the competitive Public Beach and Coastal Waterfront Access Program. Staff has begun to identify and evaluate additional selection criteria to ensure	Division of Coastal Management - Policy & Planning

Initiative Title	Description	Division/Lead Program Office
	that applications are addressing climate resilience. A Request for Proposals will be issued at the end of October 2020.	
Coastal Reserve Research and Monitoring	The Division of Coastal Management conducted applied research on techniques to enhance resiliency at Coastal Reserve sites and in coastal N.C. such as thin layer deposition and living shorelines, and continued monitoring environmental conditions, species, and habitats at Coastal Reserve sites to better understand change. The Reserve's NOAA Margaret A. Davidson Fellow is researching the impacts of sea level rise on wintering populations of vulnerable saltmarsh sparrows to inform future habitat and species management strategies.	Division of Coastal Management - Coastal Reserve
Division of Coastal Management's Coastal Training Program	The Division of Coastal Management's Coastal Training Program delivered resilience-related trainings to coastal decision-makers on nature-based solutions to reduce coastal hazards, barrier island development, and low impact development basics for water quality protection. The Division is developing curricular activities for K-12 teachers and non-formal educators to support resilience and climate change education.	Division of Coastal Management - Coastal Reserve
Rachel Carson Reserve Habitat Resilience Plan	The Division of Coastal Management is developing a habitat resilience plan for its Rachel Carson Reserve that identifies and prioritizes areas for resilience projects based on known vulnerabilities and hazards, and engineers two shovel-ready projects. The plan is funded by the National Fish & Wildlife Foundation with match from the NC General Assembly.	Division of Coastal Management - Coastal Reserve
Division of Coastal Management - Acquisition	The Division of Coastal Management acquired 70 acres to protect coastal wetland, maritime forest, and beach habitats in perpetuity at its Kitty Hawk Woods and Bird Island Coastal Reserves. Funding for the acquisitions was provided by the U.S. Fish and Wildlife Service and a donation from the landowner, and the NC General Assembly, respectively.	Division of Coastal Management - Coastal Reserve
Division of Marine Fisheries – Wastewater Assessment Training program	The Division has pursued staff training (delayed due to COVID travel restrictions) to allow for improved assessment of the potential impacts of wastewater treatment plant failures on surrounding shellfish harvesting and recreational swimming areas. Staff have also been working to develop protocols for integrating the Division's drone fleet into these pollution source assessments to provide improved data collection and more effective visual representation of impacts for public education purposes.	Division of Marine Fisheries
Stormwater Runoff and Shellfish Management Plans	Continued to enhance the Division's ability to address potential public health impacts of increased stormwater runoff through research and development of updated shellfish growing area management plans. Staff have also worked with local municipalities to help develop town- and city-wide stormwater management plans that effectively	Division of Marine Fisheries

Initiative Title	Description	Division/Lead Program Office
	balance public health considerations alongside concerns about safety and property damage due to flooding.	
Coastal Habitat Protection Plan (CHPP) Resilience Strategies	The Division is currently working on the 2021 CHPP update to include resilience strategies with priority issues including: 1) Environmental Rule Compliance to Protect Habitat; 2) Habitat Monitoring to Assess Status and Regulatory Effectiveness; 3) Submerged Aquatic Vegetation Protection and Restoration, with Focus on Water Quality Improvements; 4) Wetland Protection and Enhancement, with Focus on Nature-Based Methods; and 5) Reducing Inflow and Infiltration associated with Wastewater Infrastructure to Improve Coastal Water Quality. A chapter on Climate Change and Coastal Resilience is included in the CHPP update. This chapter references the Climate Science Report and the Climate Risk Assessment and Resilience Plan and includes the recommendations from the Natural and Working Lands (NWL) Coastal Habitats Subcommittee.	Division of Marine Fisheries
Shellfish Aquaculture Storm Management Plan	The Division is partnering with NC Sea Grant and the NOAA Office of Response and Restoration’s Disaster Preparedness Program to develop a shellfish aquaculture storm management plan for shellfish growers throughout North Carolina. A virtual workshop is being planned for Spring 2021. The goal of the workshop will be to provide the aquaculture industry and shellfish farmers in North Carolina with resources and information about aquaculture debris issues including practical gear management techniques, proper gear anchoring methods, and severe-storm preparation strategies.	Division of Marine Fisheries
Fisheries Management	The Division continues to address climate change impacts as fishery management opportunities allow through the development fishery management strategies that are flexible and support easier entry and exit into new fisheries and out of those that are declining, to prevent overfishing. The division continues to support interstate and federal cooperative management, stock assessments, and fishery management plan guidelines by incorporating climate change in vision statements and/or strategic plans and fishery management plans.	Division of Marine Fisheries
Hydrology and Hydraulics Study for Dam Overtopping in the Neuse and Lumber River Basins	Study of the hydrology and hydraulic capacity of large and very large dams identified in the Neuse and Lumber River Basins. The DEMLR Dam Safety Program developed hydrology and hydraulic models to determine storm sizes (the amount of rain) that would cause ~261 dams in the Neuse and Lumber River Basins to overtop. Dam overtopping is a sign of inadequate spillway capacity but more importantly is a characteristic of dams in stress which could lead to failure of the dam and possibly cause life safety and flooding impacts. The information gained in this study will allow	Energy, Mineral, and Land Resources/Dam Safety Program

Initiative Title	Description	Division/Lead Program Office
	State and Local governments to set priorities on responses to dams given limited personnel resources as well as monitor the need for dam modifications in the future. Two published reports consisting of approximately two-thirds of the project population in the study from SL 2016-124 4.1 (9) have been provided to DEQ, Department of Public Safety/Emergency Management (DPS/EM) and to Local Emergency Management and Planning. The final published report from the first two projects is anticipated to be completed by the end of 2020. DEMLR Dam Safety is in the process of drafting new contracts under SL 2019-224 2.1(3) to begin the next phase expansion into the Cape Fear River Basin to study approximately 326 dams.	
Dam Breach Modeling	The DEMLR Dam Safety Program has performed approximately 250 Dam Breach Models of High and Intermediate Hazard dams in North Carolina to confirm hazard classifications but more importantly to determine the hazard impacts if dam failure were to occur. These breach models are used by NCDEQ, NCDPS and Local Emergency Management to identify property and infrastructure subject to impact, residences that could be impacted as well as to develop access and evacuation routes. This information will also be shared with NC Department of Transportation (NCDOT) as state maintained roads and highways are subject to flooding and damage impacts from dam failure.	Energy, Mineral, and Land Resources/Dam Safety Program
High Hazard Dam Rehabilitation Grant (HHPD)	The DEMLR Dam Safety Program has administered a FEMA Grant for the rehabilitation of High Hazard Dams. There were three local government sub-grantees this year that shared in the receipt of \$169,000 used to develop plans to determine dam risk and repair needs to address deficiencies to ensure improved infrastructure and reduce risk and increase resilience within their communities.	Energy, Mineral, and Land Resources/Dam Safety Program
Risk-Informed Prioritization of North Carolina High Hazard Dams	The DEMLR Dam Safety Program is in the middle of a pilot study and assessment to develop risk-informed Prioritization of the High Hazard Dams in North Carolina. This pilot study of five dams will help us to develop a screening level risk assessment protocol for all High Hazard Dams. These assessments will allow our program, other State agencies including NCEM & NCDOT, local governments and dam owners to set priorities for these dams and the areas in breach inundation zones in setting repair/maintenance/ resilience plans and identifying resource needs for risk, resilience and emergency response. A larger overall study will also qualify North Carolina and its dams for future FEMA grants such as the HHPD grant previously described.	Energy, Mineral, and Land Resources/Dam Safety Program

Initiative Title	Description	Division/Lead Program Office
Environmental Preservation Recovery Support Function Group 7	<p>DEQ has led and hosted monthly meetings of this RSF7 group with NC Office of Resilience and Recovery (NCORR) and other State and Federal agency members which include the North Carolina Wildlife Resources Commission, NC Department of Agriculture and Consumer Services, NC Department of Health and Human Services, NC Cooperative Extension, NC Emergency Management, NC Department of Natural and Cultural Resources, USDA, local government representation by NC Association of County Commissioners & NC League of Municipalities, and non-governmental interest groups including The Conservation Network, MountainTrue, Southern Environmental Law Center (SELC), NC Foundation for Soil and Water Conservation, Coastal Federation, and NC Land Trust Federation among others. This group has recently provided a report, “Recommendations of the Environmental Preservation Recovery Support Function (RSF 7) for CDBG-DR and -MIT Planning Funds,” to the Executive Director of NCEM and Chief Operating Officer of NCORR recommending resilience funding support for needs identified in the North Carolina Climate Risk Assessment and Resilience Plan. Those recommendations include funding for updating NOAA’s Atlas 14, Development of pilot projects to use climate scenarios to establish future rainfall statistics, Updating the Probable Maximum Precipitation (PMP) Model for NC, Development of Middle Neuse Basin Flood Capacity Planning Project, and DCM’s Resilient Coastal Communities Program among others.</p>	Energy, Mineral, and Land Resources
Landslide Mapping and Modeling	<p>The landslide mapping program is funded by appropriations in SL 2018-5 5.6(b)(2) a. The program is implemented by one permanent, and four time-limited staff positions in the Geological Survey Section’s (GSS) Asheville Regional Office. Additional support for the program is through contracts for landslide mapping (Appalachian Landslide Consultants, PLLC); and, for geospatial data support and technology transfer (UNC-Asheville National Environmental Modeling and Analysis Center). The GSS maintains a landslide geodatabase, and these data are accessible in public web map viewer developed through the UNCA-NEMAC contract. The landslide program collects landslide data and conducts landslide modeling on a county-wide basis to identify areas vulnerable to landslides, especially those triggered by excessive rainfall events. Field mapping of landslides in Polk County is complete where 1,832 landslide features have been mapped. Field mapping of landslides in Rutherford County is underway, and 530 landslide features have been mapped to date through past and current work. Preliminary landslide susceptibility modelling is complete for 22 western NC counties. The GSS responds to requests for technical assistance on landslides from emergency</p>	Energy, Mineral, and Land Resources /Geological Survey Section

Initiative Title	Description	Division/Lead Program Office
	<p>mangers, local government agencies, the private sector, and the public. Since the program was fully staffed in June 2019, the GSS has responded to 81 landslides in 13 counties throughout western NC. Landslide data, and maps and reports (16 to date) are generated as part of the response effort. The GSS has implemented Unmanned Aerial Systems (UAS) technology for routine use in landslide mapping and analysis. Collaborative research with U.S. Geological Survey, UNC-Institute for the Environment, and the USDA-Forest Service is underway on landslides related to drought-induced wildfires. The GSS completed reports and maps on post-wildfire landslides in the Nantahala River Gorge (Swain County) and in Hickory Nut Gorge (Rutherford County). The GSS operates 9 landside-rainfall monitoring sites in cooperation with the U.S. Geological Survey and the USDA-Forest Service.</p>	
Management of Disaster Debris / Extreme Weather	<p>The Division of Waste Management will continue to work with local, state, and federal partners to participate in and conduct training and to provide guidance via division webpages. Additionally, the division will pursue the approval of rules regarding the establishment of temporary debris sites.</p> <p>Division of Waste Management field staff have continued to work with local governments on an individual basis to establish new disaster debris sites, and there are approximately 27 debris sites that are active from recent storms. The Division will also present the proposed disaster debris management rule at the November 2020 Environmental Management Commission meeting for their approval and could be effective as early as January of 2021.</p>	Division of Waste Management
Spills from Aboveground and Underground Storage Tanks / Extreme Weather	<p>The Division will continue to work with our local, state, and federal partners. We will participate in and conduct training and provide current guidance on our Division webpages. To improve and/or implement strategies to properly manage petroleum storage, we have been engaged on the following:</p> <ul style="list-style-type: none"> • continue to attend training events and Area Contingency Plan meetings with US Coast Guard; • continue to collaborate with US EPA, NC Emergency Management, NC DEQ Division of Water Resources and NC DEQ Division of Air Quality to improve notification and response time to spills reported to the National Response Center and/or NC Emergency Management. • identify unpermitted petroleum ASTs; focused within flood zones but including all of NC facilities in an outreach program consisting of awareness and preparation prior to hurricane season 	Division of Waste Management

Initiative Title	Description	Division/Lead Program Office
Water Infrastructure Funding Priority	DEQ’s Division of Water Infrastructure worked with the State Water Infrastructure Authority to include resiliency in the project priority system used to rank water projects for funding. This resiliency prioritization includes moving water infrastructure out of the flood plain (highest priority in this category) along with other aspects such as enabling continued operation, protection from flooding, etc.	Division of Water Infrastructure

b. Actions the Department has taken or plans to take to address Climate Justice and Equity (*Chapter 4 of the NC Climate Risk Assessment and Resilience Plan*)

Table A-3: DEQ Actions Related to Climate Justice and Equity

Initiative Title	Description	Division/Lead Program Office
Low-Income Energy Assistance Programs	The NC State Energy Office will be working with the NC Justice Center, NC Housing Finance Agency, and the NC Community Action Network to expand the Weatherization Assistance Program (WAP) to include EE retrofits such as efficient hot water heaters, lighting, heat-pump water heaters, heating and cooling system, mini-split ductless systems, insulation, air sealing, etc. This program also seeks to support households deferred from the WAP retrofits due to mechanical, structural, electrical, and plumbing issues.	State Energy Office – Weatherization Assistance Program
State Energy Office/ NCORR Disaster Recovery Retrofits	NC SEO will partner with the Robeson County Disaster Recovery Committee Disaster Case Managers, NCORR, NC WAP, and community action agencies would be able to provide EE upgrades to low income homes recovering from large storms	State Energy Office – Weatherization Assistance Program
Community Solar Program Models for LMI Customers	The NC Weatherization Assistance Program (WAP) will be purchasing subscriptions for low-income customers of municipal and cooperative utilities with community solar programs. In the coming year, WAP hopes to collaborate with utilities to expand the program to additional regions of the state.	State Energy Office – Weatherization Assistance Program

Initiative Title	Description	Division/Lead Program Office
Building Capacity for Climate Resilience in Albemarle-Pamlico Region Tribal Communities	Using supplemental EPA 320 funds designated to work with underserved and under-represented communities on climate resilience, APNEP partnered with the North Carolina Commission of Indian Affairs (NCCIA), NC State University, and Virginia Coastal Policy Center to work with tribal communities in the Albemarle-Pamlico region to develop a strategy for incorporating resilience into tribal planning and community engagement processes. The project includes an analysis of tribal engagement in climate and resilience planning efforts around the U.S. and coordination with state agencies and Tribal communities in Virginia. A Steering Committee is being formed which will include agency representatives from the NCCIA, NC Office of Recovery and Resiliency, NC Department of Natural and Cultural Resources, Tribal community representatives and organizations, and university partners.	Albemarle-Pamlico National Estuary Partnership, DOA, NC Commission of Indian Affairs
Tribal Coastal Resilience Connections	The Tribal Resilience project team mentioned above launched a targeted social media campaign on Indigenous Peoples Day (Oct 12, 2020) to engage and connect tribal communities in starting a regional conversation about climate resilience and provide a platform that can also be utilized to educate agency staff on considerations, perspectives, and traditional ecological knowledge unique to native communities. The team intends to use this effort to build towards a coastal resilience toolbox, create interactive skill building workshops, and develop interactive maps to assist with future resilience planning.	NCCIA, Albemarle-Pamlico National Estuary Partnership
Justice, Equity, Diversity and Inclusion (JEDI) Resources	<p>The Office of Environmental Education and Public Affairs has developed a plan to incorporate environmental justice, equity, diversity and inclusion (JEDI) into its environmental education certification program and resources for educators. The office has created a website for providing JEDI resources to educators which includes professional development opportunities, stories about people working in the field and tools, resources and research. The office will include climate related JEDI topics on this site, its existing resource database and will highlight similar efforts by other agencies and organizations on social media.</p> <p>https://www.eenorthcarolina.org/resources/justice-equity-diversity-and-inclusion</p> <p>The office has added a search feature to its online database of resources so that educators can quickly access JEDI resources and has become featuring speakers on JEDI topics during its Lunchtime Discovery Series that is streamed live in partnership with the N.C. Museum of Natural Sciences. The office will continue to focus on</p>	Office of Environmental Education and Public Affairs

Initiative Title	Description	Division/Lead Program Office
	increasing access of diverse communities to natural areas and environmental education programs.	

c. Community Assistance Activities

Table A-4: DEQ Actions Related to Community Assistance

Initiative Title	Description	Division/Lead Program Office
NC Energy Efficiency Apprenticeship Program	The NC Weatherization Assistance Program (WAP) will be collaborating with stakeholders to develop an Energy Efficiency (EE) Apprenticeship Program within the Apprenticeship NC program currently led by the NC Community Colleges System. The objective of this program is to create a pipeline of energy education and job training opportunities through community colleges and universalities, with specific emphasis on Historically Black Colleges and Universities (HBCUs) in North Carolina.	State Energy Office – Weatherization Assistance Program
Upgrade and Save Program for Energy Star Manufactured Homes	NC State Energy Program provides energy audits and energy efficiency (EE) upgrades to Energy Star Manufactured homes. This program will serve as many as five homes per month.	State Energy Office – Weatherization Assistance Program
Supportive Housing Mechanical System Efficiency Upgrades and Audits	NC State Energy Office will be partnering with Advanced Energy, the North Carolina Housing Finance Agency, SHDP organizations and installation contractors to fund mechanical equipment upgrades for up to 25 supportive housing projects such as permanent low-income multifamily housing, emergency housing, transitional housing, and hospice care housing.	State Energy Office – Weatherization Assistance Program
Greensboro area LMI housing audit and upgrade training program	NC SEO will partner with NC A&T University to identify, through home energy audits, immediate low-cost improvements that can be implemented in low-income homes. NC A&T will train up to 5 undergraduate students to perform audits of 5 homes and hire those students to perform energy-saving upgrades to those homes.	State Energy Office – Weatherization Assistance Program

Initiative Title	Description	Division/Lead Program Office
Connect to Save Energy Efficiency Program	NC SEO will partner with 4 participating electric cooperatives to install smart thermometer systems and heat pump water heater controller devices to low-income households. The program will deploy 21,000 smart thermostats and 8,000 water heater controllers by the end of 2021. This program will also replace under-performing water heaters in up to 100 homes.	State Energy Office – Weatherization Assistance Program
Coastal Resilience Community of Practice	APNEP staff have joined the N.C. Division of Coastal Management and N.C. Coastal Reserve in co-leading a Coastal Resilience Community of Practice. The workgroup consists of diverse coastal stakeholders, including agency representatives, local governments, and non-profit organizations who have agreed to focus on how ecosystem resiliency can help build local community resilience. APNEP staff are working with a subgroup to update and include resilience measures in the WRC Green Growth Toolbox.	N.C. Division of Coastal Management, N.C. Coastal Reserve, Albemarle-Pamlico National Estuary Partnership, NCWRC
Using Natural and Nature-Based Features to Build Resilience to Storm-Driven Flooding	APNEP is collaborating as a project partner on a NOAA Coastal Resilience Grant with the Virginia Institute of Marine Science (VIMS). The project is focused on increasing the use of natural and nature-based features (NNBFs) to increase resilience of coastal communities to flooding caused by storms and extreme weather events and is designed with local government officials as the target audience for project generated data and guidance. The project includes development of tools that allow local planners in coastal counties in Virginia to determine suitable areas to implement natural infrastructure. APNEP continues its role in assisting the project team in assessing transferability of the tool to coastal localities in North Carolina and is exploring creating tools and guides for local governments and communities that will promote the use of NNBFs and also complement outreach being conducted for the NC Coastal Habitat Protection Plan.	Albemarle-Pamlico National Estuary Partnership, VIMS, VCPC
Prioritizing Coastal Habitats and Carbon Resilience	APNEP was invited to collaborate on a United States Climate Alliance (USCA) project to expand work led by Duke University for the DEQ Natural and Working Lands sub-teams that were established to support N.C. Governor’s EO80. The USCA grant was awarded in winter 2019 and is a multi-state effort that builds on the EO80 NWL Initiative. The project involves a spatial analysis to map and prioritize coastal habitats that store carbon, enhance natural and human community resilience to coastal hazards, and support a variety of species. It is designed to support Atlantic coast states that are engaged in resilience planning and working to incorporate blue carbon into their	Albemarle-Pamlico National Estuary Partnership, Duke University

Initiative Title	Description	Division/Lead Program Office
	<p>climate mitigation plans. APNEP’s role has included assisting the project team in making connections to scientists, restoration practitioners, resource managers, and communities working in coastal resilience and climate mitigation in North Carolina and Virginia to ensure products reflect their feedback and priorities. APNEP led development of a proposal for an interstate pilot with partners in VA & NC, which will be conducted as part of the project in partnership with the Currituck Sound Coalition to reflect local community restoration priorities and goals.</p>	
<p>Scuppernong River Watershed Study</p>	<p>In partnership with Washington and Tyrell Counties, APNEP submitted a grant application to the Water Resources Development Fund on behalf of Washington County in Fall of 2019 and recently received notification of an award. APNEP will continue working with these local governments, who have requested assistance with technical and grant administrative capacity to address flooding and resilience planning, to conduct a hydrologic study of the headwaters of the Scuppernong River, Lake Phelps, and the surrounding land. The outcomes from the study will be utilized to build a more comprehensive approach to regional water management in order to create a water budget for the northern Albemarle-Pamlico peninsula, which has been experiencing cycles of flooding and drought in an area that is highly vulnerable to sea level rise.</p>	<p>Albemarle-Pamlico National Estuary Partnership, Division of Water Resources, DPR</p>
<p>Water Level Monitoring Stations</p>	<p>APNEP worked with NC Emergency Management to install three stations equipped with water level and meteorological monitoring equipment in the Albemarle-Pamlico region. The stations will be maintained by NC Emergency Management’s Flood Inundation Mapping and Alert Network (FIMAN). The data derived from the project will be used to address future water management actions across the watershed. The information will inform local governments, citizens, and low-lying communities subject to strong storm surges in how to plan for future events. Sea-level rise will influence these impacts, as will saltwater intrusion into freshwater streams, and the gages will allow for maximum safety of citizens and resources.</p>	<p>Albemarle-Pamlico National Estuary Partnership, NC Emergency Management</p>

Initiative Title	Description	Division/Lead Program Office
Resilient Coastal Communities Program (RCCP)	The Division of Coastal Management launched the RCCP in partnership with the NC Office of Recovery & Resiliency (NCORR) to provide technical and financial assistance to 20 local governments along the coast for capacity building, vulnerability assessments, project design & engineering over the next three years. The program is funded by the NC General Assembly and the National Fish & Wildlife Foundation.	Division of Coastal Management - Policy & Planning
Reduce Methane-Producing Organic Waste Disposal and Increase Carbon Sequestration through the Application of Finished Compost	<p>According to the EPA, 17 percent of U.S. methane emissions (a greenhouse gas with 25 times the warming potential of carbon dioxide) came from organic waste decomposing in landfills in 2018. DEACS works with stakeholders including private businesses, local governments and higher education institutions to reduce the amount of food waste and organics entering North Carolina landfills by encouraging less generation of waste in the first place, donation of edible food, and composting of inedible food scraps. These efforts help reduce the amount of methane generation and facilitate increased carbon sequestration through the application of finished compost.</p> <p>Additionally, DEACS enhances the state’s growing organic waste recycling economy by connecting producers and consumers of compost products, helping businesses and local governments grow their recycling capacity, and demonstrating why NC is the ideal place to establish new green enterprises.</p>	Division of Environmental Assistance and Customer Services
Reduce the Burden on the State’s Disposal Resources and Increase Recycling and Sustainable Material Management	<p>Increased frequency and intensity of storm events will result in increased storm debris that will place a burden on the state's disposal resources and will require appropriate management options, including recycling, composting, and other waste reduction strategies.</p> <p>The promotion and support of recycling and sustainable materials management in NC has been ongoing since the start of the state's recycling assistance program in 1989. However, this renewed focus and dialog on the link between and importance of climate change and recycling & waste diversion programs will take a greater focus in years ahead.</p> <p>DEACS encourages the expansion and implementation of waste reduction and diversion programs among local communities and industries to reduce the dependence on disposal. Communities and other entities with strong, robust waste reduction and recycling programs will be less dependent upon disposal options and more resilient to the impacts of climate change and significant storm events. In addition, by recovering</p>	Division of Environmental Assistance and Customer Services

Initiative Title	Description	Division/Lead Program Office
	valuable raw materials through recycling, communities and businesses reduce energy consumption and the impact on greenhouse gas production - further supporting the development of infrastructures and communities resilient against significant storm events.	
Energy Efficiency Assessments for Communities	DEACS Waste Reduction Partners program provides direct energy efficiency technical assistance to community facilities and their public owned treatment (water and wastewater) treatment works (POTWs). For example, WRP engineers have assisted the City of Asheville with decisions-making on facility upgrades that advance the city's 100 percent renewable energy initiative.	Division of Environmental Assistance and Customer Services
Harmful Algal Blooms (HAB)	Implemented sentinel site monitoring for harmful algae species in shellfish growing waters throughout the coast, and continued to enhance division monitoring capacity through equipment acquisition (microscope/camera), staff training, and more formalized collaboration with other state and federal entities with responsibilities in this field. Began development of standard protocol for HAB response to integrate not only Shellfish Sanitation and Recreational Water Quality staff, but also the Division drone fleet to allow for more rapid response to reported issues.	Division of Marine Fisheries
Vibrio	DMF held stakeholder meetings in December 2019 and subsequently updated our Vibrio Control Plan to include additional requirements to increase public health protection. Also have initiated collaborative research projects with academic researchers on solutions to Vibrio challenges.	Division of Marine Fisheries
Northern Lab	Continued to pursue acquisition of a facility to house the northern regional Shellfish Sanitation and Recreational Water Quality lab. Acquisition of lab space will help to increase the Division's ability to respond to water quality issues that may impact the suitability of shellfish for harvest, particularly following storm impacts.	Division of Marine Fisheries
Hydrology and Hydraulics Study for Dam Overtopping in the Neuse and Lumber River Basins	Study of the hydrology and hydraulic capacity of large and very large dams identified in the Neuse and Lumber River Basins. The information gained in this study will allow State and Local governments to set priorities on responses to dams given limited personnel resources as well as monitor the need for dam modifications in the future. DEMLR Dam Safety is in the process of drafting new contracts under SL 2019-224	Energy, Mineral, and Land Resources / Dam Safety Program

Initiative Title	Description	Division/Lead Program Office
	2.1(3) to begin the next phase expansion into the Cape Fear River Basin to study approximately 326 dams.	
Dam Breach Modeling	The DEMLR Dam Safety Program has performed approximately 250 Dam Breach Models of High and Intermediate Hazard dams in North Carolina to confirm hazard classifications but more importantly to determine the hazard impacts if dam failure were to occur. These breach models are used by NCDEQ, NCDPS and Local Emergency Management to identify property and infrastructure subject to impact, residences that could be impacted as well as to develop access and evacuation routes. This information will also be shared with NCDOT as state maintained roads and highways are subject to flooding and damage impacts from dam failure.	Energy, Mineral, and Land Resources / Dam Safety Program
High Hazard Dam Rehabilitation Grant (HHPD)	The DEMLR Dam Safety Program has administered a FEMA Grant for the rehabilitation of High Hazard Dams. There were three local government sub-grantees this year that shared in the receipt of \$169,000 used to develop plans to determine dam risk and repair needs to address deficiencies to ensure improved infrastructure and reduce risk and increase resilience within their communities. The DEMLR has also just been awarded \$495,000 to continue these efforts in the coming year including the development of a Risk-Informed Prioritization Assessment of High Hazard Dams.	Energy, Mineral, and Land Resources / Dam Safety Program
Water Infrastructure Funding Priority	Using the federal Additional Supplemental Appropriation for Disaster Relief Act (ASADRA) along with a state match, the Division of Water Infrastructure in conjunction with the State Water Infrastructure Authority funded over \$63 million in water infrastructure projects directly related to resiliency in hurricane impacted areas.	Division of Water Infrastructure

II. Department of Health and Human Services

A. Message from the Secretary

Due pervasive systemic injustices, historically marginalized populations too often live in environments that jeopardize that 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 raise the alarm bell on the disparate health impacts of climate change; provide healthcare, resources, and support to those most affected; and create lasting systemic change.

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, no doubt made worse by the higher prevalence of diseases that increase the risk of serious illness from the virus. 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 strategies.

Prior to the pandemic, DHHS leveraged its expertise in environmental health and its Early Childhood Action Plan to advance the goals of EO 80. While this work continues, the Department's primary responsibility is responding to the pandemic.

Secretary,

Mandy Cohen

B. DHHS Climate Mitigation and Economic Development Activities

Table B-1: DHHS Actions Related to Climate Resilience

Category	Summary of Initiative / Accomplishments	Division/Program Office
Education / Outreach	<p>Published article in NC Medical Journal promoting the health benefits of an NC transition to clean energy. Highlighted the NC Clean Energy Plan as creating jobs and a healthy environment, emphasizing that 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.</p>	<p>Division of Public Health (DPH) / Occupational and Environmental Epidemiology Branch (OEEB)</p>
	<p>Strengthened the NCDHHS Early Childhood Action Plan by further highlighting the impact of climate change on children’s health: <i>Climate change will continue to lead to economic, social, and environmental effects that pose risks to health and social wellbeing of children, presenting challenges to collective efforts to meet ECAP goals.</i></p> <p>Children in low-income and historically marginalized communities will be most affected by climate change. In fact, 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.⁴ Through a contract with the UNC Gillings School of Public Health DHHS completed literature review for pending Climate Change Addendum to the NC Early Childhood Action Plan.</p>	<p>Division of Public Health / Occupational and Environmental Epidemiology Branch</p>
	<p>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. It incorporates 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 for communities to explore the numerous relationships among environment, communities, and health.</p>	<p>Division of Public Health / Occupational and Environmental Epidemiology Branch</p>

Category	Summary of Initiative / Accomplishments	Division/Program Office
	Continued adaptation work : wildland fire elementary education in Hoke County and heat-health alert systems in Bladen, Robeson, and Scotland counties during 2020.	Division of Public Health/Occupational and Environmental Epidemiology Branch
	Presented on the impact of climate on health to the: <ol style="list-style-type: none"> 1. NC Museum of Life and Science 2. SR AHEC 3. International Smoke Symposium 	Division of Public Health/Occupational and Environmental Epidemiology Branch
Other Conservation and Efficiency Initiatives	The Division of Medical Assistance (DMA) expanded reimbursement for clinical services delivered via telehealth greatly reducing transportation burdens on patients accessing health care.	Division of Medical Assistance
	Instituted teleworking as part of the pandemic response, which has dramatically reduced earth warming air pollution has been dramatically. Building energy costs and vehicle miles traveled for commute and work trips, as well as all forms of travel, have been dramatically reduced.	DHHS
	Implemented electronic document transfers (DocuSign) leading to significant reduction in paper use.	DHHS

C. DHHS Climate Resilience Activities

a. Hazard Identification, Vulnerability Assessments, and/or Resilience Actions Taken Since October 15, 2019 (Chapter 5 of the Climate Risk Assessment and Resilience Plan & Element 2 of the North Carolina Resilience Strategy)

Table B-2: DHHS Actions Related to Hazard Identification, Vulnerability Assessments, and/or Resilience

Initiative Title	Description	Division/Lead Program Office
Climate Risk Assessment & Resilience Plan	Developed a resilience framework for public health and human services in partnership with the Department of Environmental Quality, Division of Air Quality (NCDAQ), DHHS. From February 2019 through March 2020, NCDEQ and NCDHHS participated in	DHHS

Initiative Title	Description	Division/Lead Program Office
	<p>12 statewide resilience planning meetings and 7 regional workshops. As a result, DHHS developed multiple recommendations including:</p> <ul style="list-style-type: none"> • Address existing toxic exposures in low-income communities and communities of color • Provide information on minimizing effects of moisture and mold • Incentivize housing integration & reduce substandard housing and increase access to cooling • Increase social and behavioral health support in vulnerable communities • Expand tracking of epidemiological health impacts of climate change in NC • Increased investment in Back@Home disaster recovery rapid rehousing initiative • Offer adequate social services support to North Carolinians navigating government processes during disaster recover 	

b. Actions taken to address Climate Justice and Equity

Table B-3: DHHS Actions Related to Climate Justice and Equity

Initiative Title	Description	Division/Lead Program Office
Early Childhood Action Plan (ECAP)	Expanded NC DHHS Early Childhood Action Plan by addressing Environmental and Climate Justice and their respective impact on children.”	Division of Public Health
Climate Justice and Equity	Continued conversations and work 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.	Division of Public Health/Occupational and Environmental Epidemiology Branch
Equity in Response to COVID-19	DHHS serves as the lead agency for COVID-19 pandemic and using a data driven approach to address the inequitable impacts we see from COVID-19. Closing these disparity gaps is important to mitigating the impacts of climate change on our most vulnerable communities.	DHHS

Initiative Title	Description	Division/Lead Program Office
	<p>DHHS provided increased social and behavioral supports across communities during COVID-19 response. Provided unprecedented health guidance to protect a wide array of North Car Early in the pandemic, DHHS created a COVID workgroup focusing on HMPs that included internal DHHS and external partners from community groups, advocacy organizations, health care providers and academic institutions. We crafted an initial response to the early data around the racial and ethnic disparities being seen in COVID cases and deaths. The work group focused its initial efforts at developing communication channels with key community organizations, developing testing opportunities accessible to the needs of HMPs, assuring that contact tracers reflected the demographics of the communities served, and informing the department’s messaging. As the DHHS COVID-19 response evolved, the framework shifted to align with the department’s 5 pillars of COVID-19 response (prevention, testing, contact tracing, isolation support, and focus. 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.</p>	

c. Community Assistance Activities

Table B-4: DHHS Actions Related to Community Assistance

Initiative Title	Description	Division/Lead Program Office
Seeking additional support	<p>Continue to educate on benefits of additional support for DHHS programs below. Additional funding for infectious disease tracking has been obtained for COVID-19.</p> <ul style="list-style-type: none"> • Building Resilience Against Climate Effects program • Back@Home program • Mold and moisture education • Infectious disease tracking 	DHHS
Climate and health adaptation	Continued adaptation projects in heat-related illness surveillance, heat-health alert systems, and wildland fire elementary education	Division of Public Health/Occupational and Environmental

Initiative Title	Description	Division/Lead Program Office
		Epidemiology Branch
Disaster Response Efforts	Continued 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.	DHHS

III. Department of Public Safety

A. Message from the Secretary

The Department of Public Safety is proud to announce our current and future proposed actions to address Climate Change and resiliency efforts necessary to mitigate climate change impacts. These include:

Energy Savings: We continue aggressively pursuing energy efficiency projects that have a positive impact on climate change while also improving staff safety and reducing maintenance pressures. Measures include:

- \$1.9M in wholesale replacement of correctional facility outdoor lighting impacting over 23 facilities since FY 2017-2018 resulting in an energy reduction of 25,000 MMBTUs
- \$.5M in LED lamp retrofits in FY 2019-2020 with a goal of only installing LED replacement lamps for all facilities in the future.
- Approximately \$.8M in exterior and interior LED retrofits will occur in future years should funding be available.

An aggressive funding effort is required to attain the 40% reduction in energy and water intensity. Approximately 87,000 MMBTUs and 98,000 kgals of water need to be saved annually at an order of magnitude cost of \$13.5M per year. A bill like HB 1292 for universities and current bills under consideration (H330 and H828) for cabinet agencies could strengthen our efforts considerably.

Zero Emission Vehicles: We have purchased eight ZEV Bolts and have deployed three to State Capital Police, one to Prisons management, one to Purchasing and Logistics, and one to the ABC Commission.

Resiliency: We lead the resiliency efforts as it relates to emergency management (more information required here)

- Central Engineering actively engages in resiliency conversations as new renovations and construction occurs. Resiliency in design will be developed as Central Engineering begins developing their design guidelines.

DPS also contains the NC Office of Recovery and Resiliency, which has primary responsibility for assuring that federal disaster recovery dollars, specifically Community Development Block Grant (CDBG) funds from HUD, are invested in communities in ways that assure that these communities will be less vulnerable and more ready to bounce back in future disasters. NCORR also leads the Department's approach to climate justice and equity and staffs the State Disaster Recovery Task Force (SDRTF). As part of that work, the NCORR Resilience Team is leading various subcommittees of the SDRTF through developing recommendations for how to administer CDBG planning funds to support state-wide climate resilience, including recommendations supporting increased data gathering and modeling of current and future precipitation to better anticipate and build for flooding and sea level rise. The Resilience Team, in partnership with the NC Rural Center and DEQ's Division of Coastal Management, has launched the NR Resilient Communities Program and is building out a training for regional and local governments on resiliency planning and programing.

Secretary,

Eric Hooks

B. DPS Climate Mitigation and Economic Development Activities

Table C-1: DPS Actions Related to Climate Mitigation

Category	Summary of Initiative / Accomplishments	Division/Program Office
Education / Outreach	Maintenance Based Commissioning Program: Phase I Training program for Adult Corrections Facilities Management	Central Engineering, Energy Management
NC Clean Energy Plan Implementation	Photovoltaic Study: Adult Corrections	Central Engineering, Energy Management
NC Motor Fleet ZEV Plan Implementation	ZEV Pilot Project, 8 ZEV Vehicles purchased, six assigned	NCDPS Fleet Management
Agency Fleet Zero Emission Vehicle / Electric Infrastructure (EO80 Section 7)	Purchasing and Logistics staff has incorporated charging infrastructure into lease renewal agreements.	Purchasing and Logistics
Agency Building Utility Consumption Reduction (EO80 Section 8)	<ul style="list-style-type: none"> • Staffing • Funding • Exterior LED Lighting • Interior LED Lighting • Maintenance Based Commissioning • Water Leak Detection & Repair 	Central Engineering, Adult Corrections

C. DPS Climate Resilience Activities

a. Hazard Identification, Vulnerability Assessments, and/or Resilience Actions Taken Since October 15, 2019 (Chapter 5 of the Climate Risk Assessment and Resilience Plan & Element 2 of the North Carolina Resilience Strategy)

Table C-2: DPS Actions Related to Hazard Identification, Vulnerability Assessments, and/or Resilience

Initiative Title	Description	Division/Lead Program Office
Education	Developing a long-term capital plan for Prisons taking sea level rise and other changing environmental factors into account, including prison closures.	Prisons, Central Engineering
NC Resilient Communities Program	NCORR, in partnership with NC Rural Center, and the DEQ Division of Coastal Resources, launched the NC Resilient Communities Program. This program will help local governments by providing technical assistance, funding, and resilience planning and project development training to regional and local communities planning and implementation of strategic resilience projects.	NC Office of Recovery and Resilience
Interagency Resilience Team	Standing up and convening the Interagency Resilience Team, pursuant to Chapter 7 of the 2020 North Carolina Climate Risk Assessment and Resilience Plan	NC Office of Recovery and Resilience
Design Guidelines	<i>Natural Hazards Resilience: A Quick Start Guide for North Carolina Communities</i> , published April 2020	NC Office of Recovery and Resilience
Strategic Planning	(Resiliency encouraged in Strategic Plan 20-21)	

b. Actions Taken to address Climate Justice and Equity

Table C-3: DPS Actions Related to Climate Justice and Equity

Initiative Title	Description	Division/Lead Program Office
Climate Justice and Equity	The Department contains the NC Office of Recovery and Resiliency is tasked with managing federal disaster funds in such a way as to help communities rebuild in a safe, equitable manner.	NC Office of Recovery and Resilience

c. Community Assistance Activities

Table C-4: DPS Actions Related to Community Assistance

Initiative Title	Description	Division/Lead Program Office
NC Resilient Communities Program	NCORR, in partnership with NC Rural Center and the DEQ Division of Coastal Resources, launched the NC Resilient Communities Program. This program will help local governments by providing technical assistance, funding, and resilience planning and project development training to regional and local communities planning and implementation of strategic resilience projects.	NC Office of Recovery and Resilience

IV. Department of Revenue

A. Message from the Secretary

The Department of Revenue (DOR) administers the tax laws and collects taxes due in an impartial, consistent, secure, and efficient manner to fund public services benefitting the people of North Carolina. As a cabinet agency, the Department is fully committed to supporting Executive Order 80 and working with other agencies to meet the established goals:

- Reduce statewide greenhouse gas emissions to 40% below 2005 levels
- Increase the number of registered, zero-emission vehicles to at least 80,000
- Reduce energy consumption per square foot in state-owned buildings by at least 40% from fiscal year 2002-2003 levels

The agency has focused on several areas in support of Executive Order 80 to include promoting electronic filing, replacing older equipment, analyzing office space requirements, analyzing long term vehicle leases and identifying opportunities for increased teleworking.

The most significant impact this year has been the agency's increase in teleworking. In March, an estimated 5% of the agency was part-time or full time teleworking. As a result of COVID19, the agency had to quickly take action to move employees to teleworking while maintaining agency operations and service levels. To date, approximately 90% of employees are teleworking. At this point the agency plans to continue offering teleworking to employees due to the positive impact on the environment as well as providing an added benefit for the employee.

Secretary,

Ronald Penny

B. DOR Climate Mitigation and Economic Development

Table D-1: DOR Actions Related to Climate Mitigation

Category	Summary of Initiative / Accomplishments	Division/Program Office
Education / Outreach	Created internal employee education program about Executive Order 80 to include intranet articles and posters.	Public Information Office
	<p>Electronic Filing Marketing Plan. Updated and implemented the marketing plan in support of increasing electronic filing for individual and business taxes. For tax year 2019, electronic filing data as of July 30, 2020:</p> <ul style="list-style-type: none"> • Individual Income 91% - 3% increase • Corporate Tax 76% - 6% increase • Partnership 82% - 9% increase <p>Launched the eNC5Q Withholding application in April 2020 with a 50% adoption rate as of July 31, 2020.</p>	Digital Communications
NC ZEV Plan Implementation	Transition to Hybrid Vehicles: Switched the majority of long term rental vehicles to hybrid vehicles prior to COVID-19. Currently, long term rentals suspended based on limited travel.	Financial Services
Agency Building Utility Consumption Reduction (EO80 Section 8)	New Revenue Building managed by the Department of Administration. Data included as part of DOA agency information.	Business Operations
Other Conversation and Efficiency Initiatives	<p>Remote Office Space Analysis. Reducing Charlotte office footprint by over 60%, advertisement for space in progress.</p> <ul style="list-style-type: none"> • LED Light Replacement. Completed replacement in rotunda areas on multiple floors. • Solicitations. Standard language identified and included in solicitations as appropriate. • Telework Policy. Policy updated and approximately 90% of employees are teleworking. • Equipment Replacement. Replaced 6 Power Distribution Units and removed 1 unit. 	Business Services

C. DOR Climate Resilience Activities

a. Hazard Identification, Vulnerability Assessments, and/or Resilience Actions Taken Since October 15, 2019 (Chapter 5 of the Climate Risk Assessment and Resilience Plan & Element 2 of the North Carolina Resilience Strategy)

Table D-2: DOR Actions Related to Hazard Identification, Vulnerability Assessments, and/or Resilience

Initiative Title	Description	Division/Lead Program Office
Telework Program	Operationalize current teleworking program and update recruiting practices to reflect employee location flexibility depending on job duties. A remote workforce improves agency resiliency during adverse weather events.	Secretary’s Office

b. Community Assistance Activities

Table D-3: DOR Actions Related to Community Assistance

Initiative Title	Description	Division/Lead Program Office
Taxpayer Assistance Remote Services	Developed a process for taxpayers to request appointments online. Upon receipt of the request, taxpayers are contacted and assistance is provided virtually in over 90% of cases eliminating the need to physically visit a DOR service center. This process supports continued services during weather events which in the past would have been limited in impacted areas.	Tax Enforcement and Compliance

V. Department of Information Technology

A. Message from the Secretary

The Department of Information Technology (DIT) is exceedingly supportive of Executive Order 80: North Carolina's Commitment to Address Climate Change and Transition to a Clean Energy Economy (EO80).

The EO80 program is a primary focus for NC DIT. In synopsis, our technicians and staff continuously manage energy utilization within our two NC DIT Data Centers and building facilities. NC DIT Data Center Managers continuously review the impacts of energy consumption and utilization and include energy impacts in our programs and operations planning and budget forecasts. NC DIT assigned an Energy Manager to work and collaborate in partnership with the NC DEQ Energy Management team. Monthly meetings are held to discuss productive methods to reduce NC DIT energy consumption and to become more efficient with the services we provide internally and to other State agencies.

Our NC DIT organization continues its focus on reducing the impacts and effects of global climate change, reducing reliance on paper and printed documentation, reduction of our carbon footprint, and increased focus on employee awareness in our role to reduce climate change impacts. Listed below are several of our high priority initiatives.

- a. Reduction of paper processing by promoting electronic reporting and distribution to agencies. DIT data centers are removing large printer capabilities to encourage electronic sharing of information and non-paper reporting. DIT Hosting Services continue assisting agencies in developing electronic sharing of information and reporting capabilities.
- b. Reduce internal environmental impacts by improving energy-efficiency in our data center facilities and Raleigh headquarter buildings. DIT has invested in improving energy monitoring capabilities tools, as Data Center managers have been implementing electronic monitoring of IT components energy utilization, allowing monitoring of energy utilization of within these data centers. DIT assigned an energy manager this year to work with the State Department of Environmental Quality Climate Control team, allowing cross sharing of information.
- c. Procure energy-efficient information technology equipment and evaluate working relationships with current and future vendors to see if there are there are opportunities to reduce our environmental impact. Our organization has increased server virtualization, increasing energy efficiency, while reducing hosts servers, reducing energy utilization. Our hosting teams have been decommissioning unused servers, promoting consolidation of lightly utilized servers, increasing efficiency of data storage systems, and properly deployed airflow management devices. In one data center, complete replacement of Computer Room Air Conditioning (CRAC) systems that were 30 years old with newer efficient systems.
- d. Continue to analyze our use of long-term lease and motor fleet vehicles to see if there are opportunities to improve energy efficiency.
- e. Focus on employee-centric programs that increase environmental awareness and increase opportunities for teleworking. DIT is extremely efficient in implementing teleworking program due to COVID-19, whereas only staff that were essential were required to continued working at their office/data center locations. All other employees worked from their home locations, that continue today at 100 percent efficiently. No services were delayed in supporting State Agencies during this continued pandemic.

Secretary,

Tracy Doaks

B. DIT Climate Mitigation and Economic Development Activities

Table E-1: DIT Actions Related to Climate Mitigation

Category	Summary of Initiative / Accomplishments	Division/Program Office
Agency Building Utility Consumption Reduction (EO80 Section 8)	<ul style="list-style-type: none"> • DIT data centers are removing large printer capabilities to encourage electronic sharing of information and non-paper reporting. DIT Hosting Services continue assisting agencies in developing electronic sharing of information and reporting capabilities. • DIT has invested in improving energy monitoring capabilities tools, as Data Center managers have been implementing electronic monitoring of IT components energy utilization, allowing monitoring of energy utilization of within these data centers. • Complete replacement of 30-year-old Computer Room Air Conditioning (CRAC) systems with newer efficient systems within one of State Data Centers. • Increase data center server virtualization, increasing energy efficiency, while reducing hosts servers, reducing energy utilization. • Updated data center design with improved properly deployed airflow management devices. • Data Storage systems replacement include all flash storage drives, whereas power utilization of these type of systems occurs when there is access to data storage. Extremely efficient. • LED Lighting project completed at the EDC. • WDC is running three mechanical cooling units in the Uninterruptible Power Supply (UPS) room at WDC, rather than four cooling units. Cooling is still maintained within recommended temperature and humidity for the UPS room. • WDC’s bi-weekly generator test runtime was reduced by 20 minutes and has contributed to lower fuel consumption for 2019-2020. • Water heater for eyewash station was shut off. It is not necessary to maintain water within OSHA specifications. • WDC purchased 1000 LED plug and play Philips bulbs for installation in the Data computer room for 2020-2021 year. Installation has been completed. 	DIT Service Delivery

Category	Summary of Initiative / Accomplishments	Division/Program Office
	<ul style="list-style-type: none"> • Lag Chiller setting at the WDC was reduced from 1 hour to 30 minutes. Lag chiller typically runs 3-4 times per year during testing and sometimes due to power outages. The reduction is the amount of time it will run after temps are normal. • During the WDC BMS upgrades it was found that we can run the AHU chilled water loop at a higher pressure and lower gallons per minute with greater cooling efficiency. • Total BTU's per square foot for DIT were reduced by 13% from 2018-2019 levels. 	
Other Conversation and Efficiency Initiatives	DIT Hosting Services continue assisting agencies in developing electronic sharing of information and reporting capabilities. These effects reduce/eliminate production of paper reporting.	DIT Service Delivery

VI. Department of Commerce

A. Message from the Secretary

A stable and habitable climate are fundamental to the health, safety and prosperity of North Carolinians. At the same time, the clean energy economy is creating significant opportunities to create jobs and propel North Carolina to be globally competitive. For these reasons, the North Carolina Department of Commerce is committed to addressing climate change and promoting a clean energy economy.

To that end, and in support of Executive Order 80, during the last year the Department has implemented several activities to mitigate climate change, promote resilience, advance climate justice, and provide community assistance. These activities, which are detailed below, are consistent with the Department's mission of improving the economic well-being and quality of life of all North Carolinians. The Department will continue and expand these activities in subsequent years.

Secretary,

Anthony Copeland

B. DOC Climate Mitigation and Economic Development Activities

Table F-1: DOC Actions Related to Climate Mitigation

Category	Summary of Initiative / Accomplishments	Division/Program Office
Education / Outreach	In May 2020, NC Rural Planning conducted teleconference interviews with local municipal leaders in all 100 counties to identify disaster issues. Among the top concerns and needs noted were that hurricane recovery was still ongoing and that small businesses needed tools and training to build resiliency. These concerns helped develop the Communities Economic Recovery and Resiliency Initiative CERRI.	NC Commerce Rural Economic Development Division Rural Planning
	The Communities Economic Recovery and Resiliency Initiative (CERRI) will provide training for small towns and rural communities to recover from the devastating economic impacts of disasters and build local economies that are more resilient to future crises. This initiative will occur over a two-year period.	NC Commerce Rural Economic Development Division Rural Planning
	The NC Main Street program will host a virtual statewide training on disaster preparedness, <i>Preparedness at Home</i> , in partnership with SC Main Street. Participants will learn how to protect businesses from risk and major disasters. Broader training of this type will be offered in 2021.	NC Commerce Rural Economic Development Division NC Main Street
	The NC Main Street program will encourage all NC Main Street communities to participate in Main Street America’s <i>National Park Service Main Street Community Disaster Preparedness and Resilience Program</i> , which will be held virtually over the next three years across the country. These trainings will provide communities with information and resources to respond to disasters.	NC Commerce Rural Economic Development Division NC Main Street
NC Clean Energy Plan Implementation	Following up on the Clean Energy Plan’s <i>Recommendation H3: Conduct an assessment of offshore wind supply chain and ports and other transportation infrastructure to identify state assets and resource gaps for the offshore wind industry</i> , Commerce issued a Request for Proposals (RFP) for consultants to conduct an offshore wind energy supply chain and infrastructure assessment during summer and fall 2020. A highly reputable consultant team was selected in August 2020 and will complete its work by the end of 2020, upon which its findings will be publicly available.	Office of Science, Technology & Innovation

Workforce Assessment Implementation	Clean Energy & Clean Transportation Workforce Assessments were completed October 2019, upon which they were posted on the website of the Department of Commerce and Department of Environmental Quality and shared directly with Commerce’s Workforce Solutions Division and the NC Community College System office. The Office of Science, Technology & Innovation has cited the assessments in several presentations and reports, including the Request for Proposals (RFP) for consultants to conduct an offshore wind energy supply chain and infrastructure assessment during summer and fall 2020.	Office of Science, Technology & Innovation; Labor & Economic Division (LEAD)
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C. DOC Climate Resilience Activities

a. Hazards Identification, Vulnerability Assessments, and/or Resilience Actions Taken Since October 15, 2019 (Chapter 5 of the Climate Risk Assessment and Resilience Plan & Element 2 of the North Carolina Resilience Strategy)

Table F-2: DOC Actions Related to Hazard Identification, Vulnerability Assessments, and/or Resilience

Initiative Title	Description	Division/Lead Program Office
Communities Economic Resiliency and Recovery Initiative (CERRI)	Many rural communities suffered economically from the pandemic and the hurricanes that have hit the state over recent years. This initiative is set up to provide local governments and businesses tools and resources to recover from the devastating economic impacts of disasters and build local economies that are more resilient to future crises.	Rural Economic Development Division NC Commerce Rural Planning
Preparedness at Home	Many communities have suffered from hurricanes, tornados, wildfires, mudslides, and even downtown district fires. The NC and SC Main Street programs will present virtual trainings on disaster recovery for Main Street communities. Participants will learn how to protect businesses from risk and major disasters.	Rural Economic Development Division NC Commerce NC Main Street

Initiative Title	Description	Division/Lead Program Office
Main Street America's National Park Service Main Street Community Disaster Preparedness and Resilience Program	This national program will be held virtually over the next three years and will provide trainings for participating communities on disaster response. Workshops and trainings will be held on disaster preparedness and resiliency.	Rural Economic Development Division NC Commerce NC Main Street

b. Actions Taken to address Climate Justice and Equity

Table F-3: DOC Actions Related to Climate Justice and Equity

Initiative Title	Description	Division/Lead Program Office
Equality and Inclusiveness in Rural North Carolina and Our Downtown Districts	In August 2020, Assistant Secretary Kenny Flowers spoke to Main Street Directors' Manager meeting on diversity and equality in rural North Carolina. Over 100 Main Street Directors attended the virtual conversation	NC Commerce Rural Economic Development Division NC Main Street

VII. Department of Transportation

A. Message from the Secretary

The N.C. Department of Transportation is committed to building resilient infrastructure and planning for a future where transportation will be automated, connected, electric and shared. The Zero Emission Vehicle (ZEV) Plan is the result of Governor Roy Cooper's Executive Order 80 to address our changing weather patterns by reducing harmful emissions and growing clean energy efficient transportation.

With the safety of North Carolinians and the resilience of our transportation infrastructure as priorities, NCDOT is constantly seeking improvements to make the state's transportation more resilient. Innovative improvements have been made in real-time early warning systems and post-storm traffic management, as well as design criteria to address known problems. NCDOT maintenance personnel continue to provide post-storm clean up and repairs to enable fast emergency responses and shorten travel disruptions.

Although the COVID crisis has hampered some of NCDOT's efforts to enact its plan to increase the adoption of zero-emission vehicles, we have been working with our partners, and holding virtual meetings and conferences to educate single vehicle and fleet operators. We have also studied the feasibility of installing charging stations at NCDOT facilities and have started prioritizing vehicle assignments that could be updated to hybrid or electric so that those changes can be implemented as soon as possible.

NCDOT continues to look for new ways to improve transportation efficiency and reduce energy consumption. We are also developing a comprehensive resilience policy to guide decision making in long-range transportation planning, individual project planning and design, and operations and maintenance. We will continue to build and maintain a robust transportation system that can adapt to, withstand, and quickly recover from climate-related hazards, keeping North Carolinians safe, and providing the social and economic linkages that make our state strong.

Secretary,

J. Eric Boyette

B. DOT Climate Mitigation and Economic Development Activities

Table G-1: DOT Actions Related to Climate Mitigation

Category	Summary of Initiative / Accomplishments	Division/Program Office
NC ZEV Plan Implementation	Coordinated with partners (Clean Energy Technology Center, Clean Cities, Plug-in-NC, and others) on ride and drive and educational outreach efforts.	Highways/Transportation Planning
	Hosted webinar on Transit Electrification on August 20, 2020.	Highways/Transportation Planning
	ZEV informational video developed and broadcast at DMV offices.	NCDMV/Communications and Public Outreach
	ZEV registration data posted on NCDOT website for public use. These data will help inform investment and placement of charging infrastructure.	Highways / Communications and Public Outreach
	Coordinated with partners on identifying Alternative Fuel Corridors and explored options for signage	Highways/Transportation Planning
NC Motor Fleet ZEV Plan Implementation	Investigated the feasibility of EV charging infrastructure at several NCDOT building locations. Began development of policy document for staff fleet vehicles to reduce GHG through proper operations, right sizing, as well as shifting to hybrid or electric vehicles as vehicles turn over.	Multiple
Agency Fleet Zero Emission Vehicle / Electric Infrastructure (EO80 Section 7)	Electric buses are continuing to emerge in North Carolina. As of 2020, nine transit systems spanning cities, organizations and universities across the state have added or will soon add the technology to their fleets. This transition from diesel to electric for medium- and heavy-duty vehicles comes with impactful environmental and health benefits as well as long-term savings.	Multi-Modal/Public Transportation
Agency Building Utility Consumption Reduction (EO80 Section 8)	NCDOT and NCSPA occupy 2,382 buildings totaling 9,376,748 gross square feet. FY-20 utility costs for those buildings totaled \$10,771,348, and energy consumption per square foot is 26% less than during the 2002/03 baseline year. At the conclusion of fiscal year 2020, energy savings programs have resulted in a total energy cost avoidance of \$28,338,381 and a water cost avoidance of \$16,910,482 - totaling \$45,244,863 over the last	Highways/Facilities Management

Category	Summary of Initiative / Accomplishments	Division/Program Office
	16 years. By the end of FY 20, cost savings measures have reduced energy and water usage per square foot in NCDOT facilities by 31% and 8% respectively as measured from the baseline fiscal year of 2002-03.	

C. DOT Climate Resilience Activities

a. Hazards Identification, Vulnerability Assessments, and/or Resilience Actions Taken Since October 15, 2019 (Chapter 5 of the Climate Risk Assessment and Resilience Plan & Element 2 of the North Carolina Resilience Strategy)

Table G-2: DOT Actions Related to Hazard Identification, Vulnerability Assessments, and/or Resilience

Initiative Title	Description	Division/Lead Program Office
VAST assessment of STC	Completed Phase 1 of the vulnerability assessment on the state’s strategic transportation corridors. Phase 2 scoped and ready to begin as soon as funding is released.	Highways/Transportation Planning
Living Shorelines	NCDOT, in collaboration with the NC Coastal Federation, received \$2.7M in matching funds through a National Fish and Wildlife Foundation Grant for Living Shoreline Projects along N.C. 24 outside Swansboro.	Highways/Hydraulics
I-6064	Hydraulic modeling and design considerations have been incorporated into the proposed I-95 widening project (which includes the Lumber River crossing) to ensure its resilience to events like Hurricane Florence, that temporarily closed the interstate in 2018.	Highways/Hydraulics
FIMAN-T	N.C. Emergency Management began installation of 71 new gauge locations for the Flood Inundation Mapping and Alert Network. Sixty-five of those locations are on NCDOT structures. This will greatly increase the area over which FIMAN-T provides real-time and predictive flood information for roadways and bridges.	Highways/Hydraulics
BridgeWatch	Implementation of the BridgeWatch program – a web based real-time structure monitoring system that alerts NCDOT personnel in advance when floodwaters threaten bridges.	Highways/Hydraulics

Initiative Title	Description	Division/Lead Program Office
Evacuation Operations	Integrated operational strategies for evacuations into project submissions (widening and deepening road shoulders for hard-shoulder running; adding cameras and overhead message boards for traveler information), implemented Wejo (connected car data) pilot from Eastern Coalition Corridor to provide real-time volumes on evacuation routes via connected vehicles.	Highways/Transportation Mobility and Safety
Traffic Operations Support	Formalized plans for additional staffing resources across the NCDOT to supplement the Statewide Transportation Operations Center for severe weather related tasks and created the accompanying training (e.g. managing high volumes of calls and requests; gaining situational awareness of route conditions from images and videos across the breadth of available assets).	Highways/Transportation Mobility and Safety

b. Actions Taken to Address Climate Justice and Equity

Table G-3: DOT Actions Related to Climate Justice and Equity

Initiative Title	Description	Division/Lead Program Office
US Army Corp of Engineers DR Act 2019	Collaboration began with the US Army Corps of Engineers on their flood mitigation and abatement studies in the Tar, Neuse, and Lumber River Basins. The USACE is spending \$3Million dollars in each river basin to develop flood abatement and mitigation strategies, particularly in minority communities located in floodplain areas. NCDOT is partnering closely with the Corps to ensure that ongoing NCDOT studies and work in these areas compliments and potentially enhances the projects that will stem from this work.	Highways/Hydraulics
National Environmental Policy Act (NEPA)	The NCDOT will continue to study and address Climate Justice and Equity for all its projects as part of its daily process guided by the National Environmental Policy Act.	Highways/Preconstruction

c. Community Assistance Actions

Table G-3: DOT Actions Related to Community Assistance

Initiative Title	Description	Division/Lead Program Office
NC MOVES 2050	Public input continued for NC Moves 2050 - a long-range strategic transportation plan connecting communities across North Carolina. The plan is focused on creating a more responsive, diverse, and inclusive transportation system for keeping people and freight moving safely and efficiently.	Highways/Transportation Planning
FTA Helping Obtain Prosperity for Everyone (HOPE) Grant	NCDOT received over \$120K as part of the Helping Obtain Prosperity for Everyone (HOPE) grant program. With this funding, NCDOT will partner with the Center for Transportation and the Environment (CTE) to develop zero-emission transit vehicle (ZETV) deployment plans for two transit systems in areas of persistent poverty – AppalCART in Boone and an eastern NC system that has not yet been identified. NCDOT will use project materials and lessons learned to assist with development of a statewide ZETV deployment strategy.	Multi-Modal/Public Transportation
BUILD Grant	NCDOT received \$25M in a federal BUILD grant to install fiber optic cable along the length of I-95 in North Carolina, and along U.S. 70 from Raleigh to Morehead City. The project will primarily provide high speed data transfer to aid NCDOT’s ITS message boards and other flood monitoring technologies. The coincident installation of fiber optic cable conduit maximizes the innovative contracting opportunities that can arise from allowing private sector to have access to the trunk line. Implementation will provide high speed internet access to underserved communities closing the internet service gap between urban and rural households in eastern North Carolina.	Highways/Preconstruction

VIII. Department of Natural and Cultural Resources

A. Message from the Secretary

The Department of Natural and Cultural Resources continues to integrate climate change realities and resilience opportunities into our work with North Carolina's arts, history, libraries, and nature. We are preserving natural floodplains and restoring wetlands to mitigate future storm impacts, protecting thousands of years of archaeological history from rising sea levels, providing disaster recovery assistance to local governments, planning for protection of historic and cultural assets in small towns, providing recreation access equity for all North Carolinians, and more.

With thousands of employees working alongside private and public partners in every corner of the State, we have seen our climate mitigation efforts multiply quickly. We know that effective planning and inventory work done today will facilitate more targeted disaster prevention and response work in the future. Our existing programs provide ready-made opportunities for investments that will make North Carolina's people and communities stronger and more resilient. This work is critical to our state's public health, quality of life, and economic strength, and the Department of Natural and Cultural Resources looks forward to significant accomplishments in the coming years.

Secretary,

Susi H. Hamilton

B. DNCR Climate Mitigation and Economic Development Activities

Table H-1: DNCR Actions Related to Climate Mitigation and Economic Development

Category	Summary of Initiative / Accomplishments	Division/Program Office
Education / Outreach	<p>Created a framework using universal values and explanatory metaphors to more clearly explain how climate change works, along with and community level solutions, which has reached over 45,000 people through virtual learning portals.</p> <p>Created an interpretive station at the zoo’s Rocky Coast habitat which focuses on climate change and gives guests one-on-one interaction with an educator on climate and environmental topics.</p> <p>Implemented education strategic plan objective that all educational programs will incorporate a conservation message.</p> <p>Conservation and Science staff published multiple papers on conservation.</p>	NC Zoo
	<p>Public programs include several topics related to climate change (e.g. ocean acidification, temperature change and reptile impacts, wind and solar energy, geothermal program, climate clues and renewable energy challenge) and its impacts on ecosystems and ocean life.</p> <p>Staff training on NNOCCI (National Network for Ocean and Climate Change Interpretation) to more effectively cover this topic.</p> <p>Incorporated conservation messaging in signage including specific actions people can take to mitigate their use of fossil fuels and plastics.</p>	NC Aquariums
	<p>Created Arts and Science mini-courses for teachers as professional development including emphasis on how the design of the Museum’s Art Park is geared toward sustainability.</p>	NC Museum of Art

Category	Summary of Initiative / Accomplishments	Division/Program Office
	<ul style="list-style-type: none"> • Implemented climate education into public events (e.g. BugFest, Science Cafes, etc.) • Increased conservation communication to Museum members by incorporating a new “Conservation Corner” section into membership e-newsletters. • Initiated an Earth Day 2020 50th anniversary project to coordinate and cross-promote Earth Day activities throughout NC. • Managed an external program, Teen Science Ambassadors, to increase science literacy among middle school and high school students. • Improved signage to increase composting and recycling in public and staff-only areas utilizing graphics provided by DNCR. • Launched a series of Sustainability Lunches in the Triangle region modeled after the successful Charlotte area Sustainability Lunch Bunches. These quarterly programs attract corporate, NGO, and government organizations. • Launched Love Nature: The Biophilia Podcast, hosted by Dr. Eric Dorfman (NCMNS Director and CEO) and Dr. Dan Dombrowski (NCMNS Chief Veterinarian) to “understand and navigate a changing world, and to allow us to live better, and more responsibly, on the planet.” • Research and Collections staff published several papers with research focused on climate-change related topics. • Creating new, interactive conservation-focused signage at the NCMNS Whiteville branch with support from an Institute of Museum and Library Services (IMLS) grant. 	NC Museum of Natural Sciences
	Presented training on the identification and protection of essential government records, a key mitigation strategy for government offices to ensure continuity of operations during an emergency. This training was based on FEMA-approved curriculum (Intergovernmental Protection for Essential Records), originally developed by the Council of State Archivists in 2011.	Division of Archives and Records, Government Records Section
Agency Fleet Zero Emission Vehicle /	Installed electric vehicle chargers at Crowder’s Mountain, Lake James, Lake Norman, Raven Rock, and Pilot Mountain State Parks. Plans for additional vehicle chargers at two parks.	NC State Parks and Recreation

Category	Summary of Initiative / Accomplishments	Division/Program Office
Electric Infrastructure (EO80 Section 7)	The Zoo acquired two Chevy Bolt, full electric automobiles through the North Carolina Department of Administration's Motor Fleet Division. We have also purchased two all-electric golf carts to replace gasoline-powered carts and two electric utility tricycles to reduce fossil fuel use for staff transportation on-park. We anticipate being able to install several dispersed, off-grid, battery storage, photovoltaic collectors around the Zoo to provide off-grid, 100% carbon-neutral power for charging these smaller Electric Vehicles. We have committed to purchasing LEV or ZEV vehicles where possible whenever new vehicles are purchased for the zoo.	NC Zoo
	Continue to modernize the Craft Services vehicle fleet and equipment with more fuel efficient and less polluting utility vans and vehicles.	State Historic Sites
	Work with Motor Fleet to plan ZEV & hybrid replacements whenever possible	Department-Wide
Agency Building Utility Consumption Reduction (EO80 Section 8)	Completed a transition to the highest Seasonal Energy Efficiency Ratio rated HVAC and the maximum LED lights that we can afford. All HVAC has been replaced and upgraded and about 80% of ship lighting replaced with LED.	Battleship North Carolina
	FY2020-2021 goal to reduce energy consumption by 3% and reduce water use by 2%. Jennette's Pier will save energy through repairing solar panel installation and improving energy efficiency of a life support system. The Pier also installed energy efficient hand dryers, performed an EO80 energy efficiency audit, plans to replace thirty CFL light fixtures with LED fixtures, and replaced metal halide entrance sign light fixtures with solar rechargeable LED fixtures.	Aquariums
	Working to replace fluorescent lights in the Government & Heritage Library stacks with motion-detection LED fixtures and add UV protection to all windows in the Government & Heritage Library reading room. Recommend all staff turn off computers in the evening to reduce energy use.	State Library
	Upgraded all lighting to LED systems. Installing more efficient HVAC systems. Utilizing geothermal HVAC systems when applicable during major renovations. Encouraging individual sites to adjust thermostat controls to cooler heating season temperatures and warmer cooling season temperatures where such changes will not affect artifact preservation.	State Historic Sites

Category	Summary of Initiative / Accomplishments	Division/Program Office
Other Conservation and Efficiency Initiatives	Worked with City of Raleigh to install a bike rack in front of DNCR Raleigh headquarters to encourage staff to bike to work when possible.	NC Capital Projects
	Working to reduce the amount of plastic used for events by 50% and implementing a plan to reduce the amount of paper used for administrative functions by 25%. Purchasing smaller amounts of supplies to eliminate future waste as supply needs change. Collaborate with DNCR and the NC Public Library Directors Association to more formally recognize and support the role that libraries play in disaster preparedness and recovery efforts.	State Library
	75% of solid waste is diverted from landfill disposal via recycling and composting. Eliminated plastic soda and water bottles and replaced them with more readily recyclable aluminum ones. Recycled 150 tons of steel reinforcing rod repurposed 8,400 tons of crushed concrete generated by a demolition project. The concrete has been repurposed by the Department of Transportation as fill for a highway project. Installed multiple water bottle fillers throughout the zoo, facilitating the use of reusable bottles. The zoo has received ISO 14001 certification through an external audit every year since 2003.	NC Zoo
	Installed water fountains with the capacity to refill personal water bottles to help eliminate single use plastic bottles. Encouraging sites to utilize sustainably sourced materials for structural renovations and exhibit builds.	State Historic Sites
	Began using DocuSign software for all documents, where applicable.	NC Land and Water Fund
	Renewed contract with CompostNow to compost at public-facing cafes and internal break rooms. Aiming to make future public events zero-waste. Writing an institution-wide environmental policy to reflect our values and goals related to conservation and climate change. Seeking certification from DEQ's NC Green Travel Initiative.	NC Museum of Natural Sciences

C. DNCR Climate Resilience Activities

a. Hazards Identification, Vulnerability Assessments, and/or Resilience Actions Taken Since October 15, 2019 (Chapter 5 of the Climate Risk Assessment and Resilience Plan & Element 2 of the North Carolina Resilience Strategy)

Table H-2: DNCR Actions Related to Hazard Identification, Vulnerability Assessments, and/or Resilience

Initiative Title	Description	Division/Lead Program Office
Prescribed fire as method to increase ecosystem resilience	Active prescribed fire program to maintain natural communities in an ecologically healthy condition. A healthy habitat is one better suited to adapting to whatever climatic condition it faces. The Division has performed 70 separate fires on 15 of its properties in the past year totaling 5,708 acres.	NC State Parks and Recreation
Land restoration and management	Actively restoring lands and waters that have been damaged from past land activities. Actions on lands include conversion of pine plantations and abandoned agricultural fields to a more natural condition. Streams and wetlands are being restored by re-creating natural channels and removing artificial structures such as dams and culverts.	NC State Parks and Recreation
Parks and Recreation Trust Fund – 2020 Grant Cycle Projects	This year, local governments were granted more than \$5M to fund sixteen local projects that improve or create parks, trails, greenways, and other recreational facilities. Established in 1994, PARTF has funded scores of state park projects and local park projects in floodplains and other areas vulnerable to climate change.	NC State Parks and Recreation
North Carolina Land and Water Fund – 2020 Grant Cycle Projects	Lands conserved and restored with funding from the NC Land and Water Fund (formerly Clean Water Management Trust Fund) preserve resilient landscapes, provide flood abatement for nearby communities by helping store and slow the flow of water during storm events, protect natural streambank vegetation to stabilize shorelines, and provide habitat for rare species. In total, over 6,700 acres will be protected, including over 1,800 acres of floodplain, and over 50,000 feet of stream will be enhanced or restored as a result of the 2020 grant awards.	Division of Land and Water Stewardship/NC Land and Water Fund
Climate Risk Assessment and Resilience Plan - Ecosystems Chapter	Field Biologists monitor rare species as they conduct biological inventories of lands under consideration for protection as state nature preserves. Special attention is paid to species and habitats that are most vulnerable to a changing climate and natural disasters such as hurricanes, floods, and landslides.	Division of Land and Water Stewardship/Natural Heritage Program
Climate Risk Assessment and Resilience Plan	NC Natural Heritage Program and NC Land and Water Fund staff participate in the Environmental Recovery Support Function of the State Disaster Recovery Task Force, as does the State Historic Preservation Office in the Cultural Resources Recovery Support	Division of Land and Water Stewardship and

Initiative Title	Description	Division/Lead Program Office
	Function, contributing map data and recommendations for the upcoming Disaster Recovery Framework update.	State Historic Preservation Office
Natural and Working Lands Action Plan	Collaborating with researchers at Duke University Nicholas Institute for Environmental Policy Solutions to analyze and summarize the resilience and carbon benefits of lands purchased and restored with funding from the NC Land and Water Fund since the Fund's inception as the Clean Water Management Trust Fund in 1996. The NHP and Duke also recently completed a similar study of NC Department of Public Safety lands.	Division of Land and Water Stewardship/Natural Heritage Program and Land and Water Fund
Climate Risk Assessment and Resilience Plan	Working to standardize data submitted by state government programs when creating Chapter 5 and Element 2, to facilitate archiving and building future versions of the Plan. Data standardization facilitates straightforward querying and filtering, simplifies data entry, and ensures it can be integrated into the existing data. During the next few months, the Natural Heritage Program will create an accessible and user-friendly data entry form that will allow state government users to input standardized data, generate reports, and query the database. This will allow the database to be continually updated rather than represent a single snapshot in time. The state climatology office will hold the "living" database and the Natural Heritage Program will hold a back-up of the original database.	Division of Land and Water Stewardship/Natural Heritage Program working with US Climate Resilience Toolkit NOAA Affiliate
Natural and Working Lands Action Plan	Staff provided leadership in coordinating the Natural and Working Lands Stakeholders group and drafting the Plan released in June 2020 and continues to take a lead role in facilitating the stakeholder group as it moves into the implementation phase of the Plan.	Division of Land and Water Stewardship/Natural Heritage Program
Natural Heritage Inventory	Working to update the NHP Lists of Rare Plant and Animal Species of North Carolina. These reports, which are updated every two years, provide a list of all the species that are listed as Endangered, Threatened, or of Special Concern as well as all species that are not formally protected but are imperiled enough to warrant tracking and monitoring to prevent extirpation.	Division of Land and Water Stewardship/Natural Heritage Program
Living with Water	A \$2. 3M project funded by various grants (in hand) to build a constructed wetland in the middle of the Battleship North Carolina's park to deal with rising sea level and more frequent flooding. Currently in the design phase and could award a contract by year's end.	Battleship North Carolina
United States Army Corps of Engineers (USACE) South Atlantic Coastal	Consulting with USACE to identify cultural resources (historic and archaeological sites, historic districts, and other historic resources) vulnerable to coastal storm damage and sea level rise. This analysis is part of a multi-state effort throughout the southeastern United States and Caribbean. GIS and archaeological and architectural survey data along with	State Historic Preservation Office (HPO) and Office of

Initiative Title	Description	Division/Lead Program Office
Study At-Risk Cultural Resources Analysis	staff expertise are all proving crucial to informing this effort. Many of the places identified are federal and state historic assets open to the public.	State Archaeology (OSA)
Historic architectural Surveys (post-Hurricanes Florence and Michael)	Identified six counties that received FEMA disaster declarations from hurricanes Florence and Michael currently lacking historic architectural survey information. Will undertake these needed surveys in Hoke, McDowell, Montgomery, Person, Polk, and Vance counties	State Historic Preservation Office (HPO)
North Carolina Coastal Cemetery Survey (post-Hurricanes Florence and Michael)	Undertaking a North Carolina Coastal Cemetery Survey to identify, document, and assess the condition of historical cemeteries on state lands in the nine coastal counties (Dare, Hyde, Beaufort, Pamlico, Carteret, Onslow, Pender, New Hanover, and Brunswick) likely to have been impacted by storm damage. Particular attention to recording cemeteries traditionally associated with African American communities, which are underrepresented in state records.	Office of State Archaeology (OSA)
North Carolina Shorescape Archaeological Survey	Undertaking a North Carolina Shorescape Survey to identify and document archeological resources associated with coastal communities that are most at risk of being damaged by storm events. Focus is on identifying and documenting sites within 200 ft. (60 meters) of the shoreline.	Office of State Archaeology (OSA)
Statewide Historic Preservation Plan Update	Preliminary planning for the 2023 10-year update cycle of the state plan is underway. The update will include specific measures to be taken toward strengthening disaster mitigation and resiliency for historic resources throughout the state.	State Historic Preservation Office (HPO)

Initiative Title	Description	Division/Lead Program Office
Brunswick Town / Fort Anderson (BTFA) Wave Attenuator Project	<p>Continued installation of wave attenuators in the Cape Fear River to protect more of the sensitive, in situ Colonial-era archaeological resources and Civil War earthworks present along the shoreline from wave action and hurricane storm surge.</p> <ul style="list-style-type: none"> • Of the approximately 5,000 feet of shoreline in need of protection, two phases of wave attenuators have been installed for a total of 460 feet, with an additional two phases (1,775 more feet of protection) to be completed by December 2021. • The excellent performance of previously installed sections during Hurricane Florence in protecting those segments of shoreline was in stark contrast to the loss of and damage to the largely non-protected stretches at Brunswick Town, which has been the subject of study through monitoring by the Coastal and Estuarine Studies Lab of the University of North Carolina-Wilmington. <p>The agency believes this system is a demonstration project nationally for protection of vulnerable shorelines, particularly in the context of threatened cultural resources.</p>	Division of State Historic Sites And Division of Historical Resources / State Historic Preservation Office (HPO) and Office of State Archaeology
Resiliency projects for State-Owned Historic Sites' properties	<p>Several state-owned historic properties are proposed to receive federal funding to address Hurricane Florence / Michael damage and provide greater resiliency:</p> <ul style="list-style-type: none"> • <u>Battleship USS North Carolina</u>: Address resiliency for the mast superstructure using newly developed marine coatings that are more resistant to wind-driven rain and resultant scouring and corrosion of the steel. • <u>Galen Stone Hall @ Charlotte Hawkins Brown Memorial</u>: Design and construction of building and foundation drainage systems to prevent basement flooding that the building experienced during Florence. • <u>Douglas Complex @ Tryon Palace</u>: Address damaged flooring and brick sheathing, mold eradication, and water runoff control. • <u>Harper House @ Bentonville Battlefield</u>: Installation of an emergency generator to maintain power to the HVAC system during severe wind-driven rainstorm events will avoid future problems like the week-long period post-Florence where the building could not be adequately dried out and developed mold and plaster issues. 	Division of State Historic Sites Battleship North Carolina Memorial Tryon Palace Division of Historical Resources / State Historic Preservation Office (HPO) and Office of State Archaeology
Libraries in Disaster Preparedness	Collaborate with DNCR and the NC Public Library Directors Association to more formally recognize and support the role that libraries play in disaster preparedness and recovery efforts.	State Library

Initiative Title	Description	Division/Lead Program Office
Wildlife Monitoring	Monitoring of species -- identifying potential impacts of climate change on plants and animals. Over time, scientists will be able to correlate data with changes in weather patterns and sea levels.	NC Aquariums

b. Actions Taken to Address Climate Justice and Equity

Table H-3: DNCR Actions Related to Climate Justice and Equity

Initiative Title	Description	Division/Lead Program Office
Lunchtime Discovery Series	Webinar with presentation and public question and answer session: The Other Side of Environmental Injustice: Parks and Greenspace Inequity in Marginalized Communities, NC Museum of Natural Sciences Via YouTube (https://youtu.be/hnqh_2R8eX4)	NC Museum of Natural Sciences
Post-storm constituent consultations	<p>DNCR staff have worked on multiple fronts to address storm recovery and climate resilience in two historically marginalized communities with frequent flooding— Princeville and Pembroke.</p> <p>Princeville: Consulted with town leaders to preserve buildings and artifacts associated with the historic Princeville School and the Matthewson House. Although, after careful consideration, the c.1870 Matthewson House was demolished in 2020, HPO and OAH staff continue to consult with town leaders to plan storage for the salvaged architectural elements and to assist with plans for a future Princeville Museum.</p> <p>Pembroke: Consultations have led to recommendations for federal resiliency funding to address structural needs at The Indian Education Program Museum in the historic Pembroke High School. In addition, CREST has been able to direct federal funds earmarked for Hurricane Florence recovery to upgrade storage supplies for the museum’s cultural heritage collection.</p>	Division of Historical Resources, State Historic Preservation Office (HPO) Office of Archives and History (OAH), Cultural Resources Emergency Support Team (CREST)

Initiative Title	Description	Division/Lead Program Office
Public Lands/Open Space Investment	Plan to work with DEQ & the Andrea Harris Social, Economic, Environmental, and Health Equity Task Force to incorporate park and trail investment in underserved communities into the State’s environmental justice work.	State Parks / Land and Water Stewardship

c. Community Assistance Actions

Table H-4: DNCR Actions Related to Community Assistance

Initiative Title	Description	Division/Lead Program Office
Cultural Resources Emergency Support Team: Regional Response Supplies	The Cultural Resources Emergency Support Team (CREST) will continue to help communities recover cultural heritage collections from damage inflicted by natural disaster. CREST received federal funds to establish a fifth regional cache of disaster recovery supplies at the Museum of the Albemarle to serve the vulnerable northeast region and the Outer Banks more readily.	Division of Archives and Records/Cultural Resources Emergency Support Team (CREST)
Historic Resilience Planning Project for Local Governments	In collaboration with the NCImpact Initiative at the UNC School of Government, working to better link local disaster planning to historic resource resiliency planning, and create and provide training for state agency personnel, local governments, and non-profit historic sites in best practices for disaster preparedness and response.	Division of Historical Resources / State Historic Preservation Office (HPO)
Hurricanes Florence and Michael Constituent Subgrant Program for Historic Preservation Recovery	In December 2019, the National Park Service (NPS) awarded the North Carolina State Historic Preservation Office (HPO) approximately \$17 million in federal grant funding to provide recovery assistance to historic resources damaged by Hurricanes Florence and/or Michael that are listed in or eligible for listing in the National Register of Historic Places. <ul style="list-style-type: none"> The award allowed the HPO to make available up to \$9.25 million in grants for historic resources located in the 61 eligible counties in North Carolina designated by FEMA for disaster assistance. In September 2020 following a successful subgrant solicitation period, the HPO submitted 22 constituent subgrant proposals to the National Park Service for funding approval	Division of Historical Resources / State Historic Preservation Office (HPO)

Initiative Title	Description	Division/Lead Program Office
	totaling \$9.25 million in cumulative assistance. These proposed projects include three planning projects, and nineteen brick and mortar projects. NPS will make final decisions soon.	
Constituent consultations and training videos	<p>The Restoration Branch of the State Historic Preservation Office (HPO) provides technical advice for restorations, rehabilitations, and building maintenance to owners of historic buildings at no cost or obligation.</p> <ul style="list-style-type: none"> • Professional Development and Training. The Branch has sought professional development opportunities regarding building adaptations for greater resiliency, including attendance at the national biennial <i>Keeping History Above Water</i> conferences and National Park Service training for historically sensitive building elevations where flooding is an issue. Several staff members have successfully completed floodplain management training with North Carolina Emergency Management. • Constituent training videos. The Branch has produced constituent videos available on YouTube, including review of federal disaster recovery assistance available for property owners in historic districts; how to use GIS mapping and data to prepare for and respond to natural disasters; case studies of building elevations for better resiliency; and how to dry out a flooded historic building. • Constituent consultations. The Branch provides expedited and on-site assistance to historic property owners following natural disasters and fires and conducts consultations regarding damaged historic buildings and best practices for repair and recovery. 	Division of Historical Resources / State Historic Preservation Office (HPO)
Grant writing support	Technical assistance is provided to local governments applying for PARTF grants through a contract with Recreation Resources Service (RRS) at NC State University.	NC State Parks and Recreation

IX. Department of Administration

A. Message from the Secretary

The NC Department of Administration is committed to achieving North Carolina’s climate change and clean energy goals, as outlined in Executive Order No. 80. DOA’s efforts to build a more resilient and prosperous North Carolina are embedded in the fabric of the agency and in the Department’s first strategic imperative, to “Explore new or improved ways to deliver effective and efficient services to create value for taxpayers.”

The commitment to implementing those actions directed in Executive Order 80 is shared across divisions but is most relevant to the DOA’s State Construction Office, Facilities Management Division, Motor Fleet Management, and the Commission of Indian Affairs. Each division has designated program leads to direct the Agency’s climate change and resiliency efforts. In October 2020, DOA submitted the Motor Fleet Management ZEV Plan 2020 updates, which highlights successes in the areas of electrification, charging solutions and accessibility, and pending vehicle contract amendments, which will make transitioning to an electrical vehicle more feasible for agencies.

Executive Order 143, “Addressing the Disproportionate Impact of COVID-19 Felt on Communities of Color,” established the Andrea Harris Social, Economic, Environmental, and Health Equity Task Force, which created an opportunity for the Department of Administration to work collaboratively with the Department of Environmental Quality to address the ever-growing importance of environmental justice and inclusion initiatives in North Carolina. The Task Force submitted its first report, which includes environmental justice and inclusion policy recommendations, in December 2020.

Secretary,

Machelle Sanders

B. DOA Climate Mitigation and Economic Development Activities

Table I-1: DOA Actions Related to Climate Mitigation and Economic Development

Category	Summary of Initiative / Accomplishments	Division/Program Office
Education / Outreach	<p>The Andrea Harris Social, Economic, Environmental, and Health Equity Task Force, chaired by DOA Secretary Sanders, and the Task Force’s Environmental Justice and Inclusion subcommittee, chaired by DEQ Secretary Regan, was directed in EO143 to, “Advance climate justice by prioritizing actions that equitably reduce greenhouse gas emissions, increase community resilience to the impacts of climate change, and advance sustainable economic and infrastructure recovery efforts for low-income, minority and vulnerable communities and to encourage and enhance environmental justice, inclusion and equity education.” Greg Richardson, Director of DOA’s Commission of Indian Affairs, also serves on the Task Force’s Environmental Justice and Inclusion subcommittee. The Environmental Justice and Inclusion subcommittee has hosted listening sessions, engaged the public through the public feedback form on the Task Force’s webpage, and crafted potential policy recommendations which could potentially impact climate mitigation efforts.</p>	Andrea Harris Task Force; Secretary’s Office
NC ZEV Plan Implementation	<p>NC DOA MFM ZEV Plan update was submitted to the Governor on October 1st. MFM’s ZEV Plan goals are intended to align with the NC ZEV Plan. DOA MFM continues to work with agency partners to meet the state’s electrification goals.</p>	Motor Fleet Management (MFM)
NC Motor Fleet ZEV Plan Implementation	<p>DOA MFM ZEV Plan 2020 Update As of October 2020, Motor Fleet Management has 35 electric vehicles, 25 of which are assigned to agencies with 301,958 miles driven over the lifetime of the ZEV program. The State Fleet also includes 5 hybrid vehicles.</p>	Motor Fleet Management (MFM)

Category	Summary of Initiative / Accomplishments	Division/Program Office
Agency Fleet Zero Emission Vehicle / Electric Infrastructure (EO80 Section 7)	<p>The NC Department of Administration is prioritizing ZEVs in the purchase of new vehicles by completely overhauling the vehicle purchase contract, 070A. In the past this contract has been awarded as a “winner take all” for each vehicle class. Meaning all vendors bid to be the single provider for each vehicle class. For example, if Ford won the light duty truck class, North Carolina could only purchase F-series trucks. The next contract, set to be executed in the next few months, will award the entire portfolio of each manufacturer who bids. After that award, North Carolina agencies will be able to choose the light duty truck which best fits their requirements and budget from all manufacturers (who bid). The same will be true for PHEV’s and BEV’s. And as more manufacturers bring PHEV’s and BEV’s online, they can add the new vehicles to the contract via addendum.</p> <p>The “prioritizing” ZEV use for agency business travel is happening through analysis of available telematic data to identify fleet vehicles which can be replaced with a ZEV where mid-day charging is minimal and overnight parking is consistent. This data is also being used to identify optimal locations for charging infrastructure.</p> <p>Additionally, the NC DOA MFM ZEV Plan 2020 Update outlines DOA’s new efforts to prioritize the use of ZEV’s whenever feasible. DOA MFM continues to work with motor fleet POCs in agencies to convert to EV when feasible when each vehicle’s replacement cycle comes around.</p>	Motor Fleet Management (MFM)
Agency Building Utility Consumption Reduction (EO80 Section 8)	<p>Completed Projects:</p> <ol style="list-style-type: none"> 1. Downtown Complex - Chilled water isolation project for all buildings. 2. New Revenue Building - Replace obsolete DDC controls on all air handling units. 3. Caswell Building - HVAC Renovation Project: new VAV boxes, new air handling units, and economizer repairs. 4. New Education Building - DDC controls conversion, floors 2 & 3. 5. Administration Building - Rooftop units addition (complete 10/31/2020). <p>Funded Projects:</p> <ol style="list-style-type: none"> 1. Museum of Science - Building automation system retrofit. 2. Downtown Complex - Lighting retrofit (ongoing maintenance). 3. New Education Building - DDC controls conversion, basement & first floor. 	State Construction Office

Category	Summary of Initiative / Accomplishments	Division/Program Office
Other Conversation and Efficiency Initiatives	<p>Future Projects (Subject to Funding):</p> <ol style="list-style-type: none"> 1. Downtown chiller plant and steam plant upgrades. 2. Parking Garage 65 - Recommissioning of CO controls and exhaust systems. 	State Construction Office

C. DOA Climate Resilience Activities

a. Hazards Identification, Vulnerability Assessments, and/or Resilience Actions Taken Since October 15, 2019 (Chapter 5 of the Climate Risk Assessment and Resilience Plan & Element 2 of the North Carolina Resilience Strategy)

Table I-2: DOA Actions Related to Hazards Identification, Vulnerability Assessments, and/or Resilience

Initiative Title	Description	Division/Lead Program Office
Steam Distribution Piping and Condensate Return Piping	<p>One hazard of failed steam distribution lines or condensate return lines is energy loss. More importantly, steam leaks and or condensate leaks have the potential to damage other equipment or cause harm to employees or the public. Working in tandem with the Office of State Construction, we have identified failing and/or antiquated steam and condensate return piping. Several hundred feet of old piping has been replaced. Additional piping has been identified for replacement if funds become available.</p> <p>DOA FMD has implemented a steam trap survey and maintenance program. The steam trap maintenance program has reduced an estimated 2,272,000lbs. of steam loss. Mitigated associated CO2 emissions by an estimated 409,0000 lbs.</p>	Facilities Management Division / State Construction Office

Initiative Title	Description	Division/Lead Program Office
DOA Central Heat Plant Natural Gas Curtailment	<ul style="list-style-type: none"> • When the supply of natural gas reaches a certain demand, large consumer like the Central Heat Plant are placed on curtailment by the natural gas supplier. During curtailment, the Central Heat Plant is required to switch to an alternate fuel source (#2 fuel oil). If we are not able to operate on our secondary fuel source during times of curtailment, we could have our supply of natural gas interrupted by the supplier or we could be billed at a much higher rate for the natural gas that we use. • DOA’S Central Heat Plant has two fuel oil storage tanks with 80,000 gallons of storage capacity each. We typically have 140,000 gallons of fuel oil stored to address any curtailment requirements. Potential hazard of having this much oil on hand is a possible oil spill/leak. We are in the process of having these tanks resurfaced/recoated to extend the life of the tanks, and to minimize the potential risks for leaks. We are also in the process of having an older decommissioned tank removed. Having this tank removed eliminates a potential environmental hazard. 	Facilities Management Division
Vehicle Emissions Control Requirement	<p>As required by 15A NCAC 2D .0521 “Control of Visible Emissions” As required by 15A NCAC 2D .0521 “Control of Visible Emissions”. We are required to perform a visible emission test within 15 days of switching our fuel source from natural gas to #2 fuel oil. The two methods of visible emissions testing are Method 9 and method 22. We use method 9. To be a visible emissions evaluator, a person must attend classroom training and pass a field examination. To maintain the certificate, the field examination must be taken and passed every 6 months and the classroom session every 3 years. The Central Heat Plant has staff that are certified to perform the visible emission test. Staff are currently certified through Eastern Technical Associates. For transparency, we contact DEQ before any planned emissions testing. DEQ was on site last year and performed the visible emission test concurrently with our department.</p>	

Initiative Title	Description	Division/Lead Program Office
Stormwater and Sewer Drainage	Implemented a drain maintenance program that uses a commercial jetter. Sewer/storm water jetters, also known as “hydro-jetters” or “water jetters”, are powerful drain cleaning machines that use high-pressure water jets to clear obstructions in drainpipes. This program has effectively and proactively addressed storm and sewer main obstructions. Moreover, reduced the potential for water damage and hazardous environmental conditions.	Facilities Management Division
Archive and History Building Improvements	Installed a more energy efficient roof drain dual pump	Facilities Management Division
Dobbs Building Improvements	Located at the Southwest lower level stairway, we have installed a water runoff pit and energy efficient pump for storm/rainwater removal to prevent a slip hazard and water entering the building.	Facilities Management Division
New Revenue Building Improvements	<ul style="list-style-type: none"> • Installed a PVC sleeve to address a leak in the stormwater discharge pipe. • Replaced 6” PVC piping and check valves in the storm water pit to prevent water that consistently backs up through drains at the loading dock. 	Facilities Management Division
Art Museum East Gallery Chiller Maintenance	Coated end bells on both chillers with an epoxy coating to prevent the end sheets from rusting through. If that happened the chiller would be unrepairable causing loss of cooling for an extended amount of time.	Facilities Management Division
Public Health Lab Chiller Maintenance	Begin Coating of end bells on all three chillers (10/13/20202) with an epoxy coating to prevent the end sheets from rusting through. If that happened the chiller would be unrepairable causing loss of cooling for an extended amount of time.	Facilities Management Division Facilities Management Division
Heat Exchanger Project Chiller Maintenance	Working in tandem with the Office of State Construction, we have Installed chilled water heat exchangers in fourteen buildings to improve cooling by extending pump life, reduce chilled water usage, and to improve efficiency.	Facilities Management Division
Antiquated cooling system serving State Capital Police	We have installed a new 15-ton system due to extreme unit age and limited replacement parts availability for the old unit. Also, by doing this, we have removed an obsolete R-22 refrigerant system and replaced it with a newer and more efficient 410(A) system.	Facilities Management Division

Initiative Title	Description	Division/Lead Program Office
Downtown Complex Chiller Maintenance	<ul style="list-style-type: none"> • Coated end bells on both chillers with an epoxy coating to prevent the end sheets from rusting through. If that happened the chiller would be unrepairable causing loss of cooling for an extended amount of time. • We have worked with the Office of State Construction to replace two failing cooling towers with new stainless-steel cooling towers. 	Facilities Management Division

b. Actions Taken to Address Climate Justice and Equity

Table I-1: DOA Actions Related to Climate Justice and Equity

Initiative Title	Description	Division/Lead Program Office
Andrea Harris Social, Economic, Environmental, and Health Equity Task Force	<p>The Andrea Harris Social, Economic, Environmental, and Health Equity Task Force, chaired by DOA Secretary Sanders, has partnered with DEQ’s Environmental Justice and Equity Advisory Board to plan for instances where the two boards may work together in the coming year. Additionally, the Task Force’s Environmental Justice and Inclusion subcommittee will be leading a portion of the Task Force’s November meeting to educate members of the Task Force and those members of the public in attendance on environmental justice and inclusion topics most relevant to North Carolina.</p>	Chair, DOA Secretary Machel Sanders
Commission of Indian Affairs, Tribal Resilience Program	<p>The Tribal Resilience Program is a grant funded by DEQ from June 2020- September 2020. DOA-CIA is currently applying for a contract extension. The purpose of the program is to protect the environmental health of waterways and natural resources in the Albemarle-Pamlico region, as well as the communities that live in, visit and depend on them. The program engages the relevant community through workshops, information sharing, strategic planning sessions, education and outreach.</p> <p>Press release here</p> <ul style="list-style-type: none"> • Project partners: Albemarle-Pamlico National Estuary Partnership, NC Commission of Indian Affairs, DEQ, NC Office of Recovery and Resiliency, NCSU, Virginia Coastal Policy Center, UNC American Indian Center, 	Commission of Indian Affairs

Initiative Title	Description	Division/Lead Program Office
	<ul style="list-style-type: none"> Project team launched social media campaign on Monday, 10/12, Indigenous Peoples Day. Created a Facebook page called "Tribal Coastal Resilience Connections", which has already got over 300 likes. Pictures and videos that show our #WaterStory have started to pour in. Tribes represented so far are Nottoway, Meherrin, and Lumbee. North Carolina Native American Youth Organization has also been contributing. These water stories will be used to create a digital map as well as help the project team plan our interactive spring workshops. 	

X. Department of Military and Veteran Affairs

A. Message from the Secretary

The North Carolina Department of Military and Veteran Affairs is the newest state government agency and we are dedicated to helping our veterans and active duty men and women access the programs, benefits and resources that they earned when they took the oath and answered the call to service. Our staff is committed to providing the highest level of service, responsiveness and integrity in keeping with the principles and values of this state and nation that our military and their families deserve.

Our staff is also committed to support EO80 efforts with implementation measures at all DMVA/ State owned facilities.

Secretary,

Larry D. Hall

B. DMVA Climate Mitigation and Economic Development Activities

Table J-1: DMVA Actions Related to Climate Mitigation and Economic Development

Category	Summary of Initiative / Accomplishments	Division/Program Office
Education / Outreach	<p>DMVA is a State agency that assists with the management of 4 military Skill Care Nursing Homes housing 449 veterans and are currently in the construction phase of a 120 Bed Home and plans to build a 6th Home to provide additional housing for veterans in the state. North Carolina has one of the largest military footprints of any state in the country, representing three out of the four branches of service and totaling 129,049 in 2016. Military and defense industries are the second largest employers in our state, and the military has an economic impact of \$66 billion annually. The military bases located in North Carolina are major drivers in our communities, allowing families and business to thrive through the synergy and partnerships that have developed between local and state government, military and defense sectors, and local businesses throughout our history.</p> <p>DMVA Education/ Outreach has involved a wealth of information that we were able to obtain on the efforts of the NC Military Installations and what they are doing with regards to Climate Change Mitigation as well as measures that we plan to pursue in the aforementioned 6th Home currently planned to be built in Raleigh if applied for Grants are awarded, such as Solar System and a Green Roof System. We currently have 2 facilities that are Single Pipe Geothermal HVAC Systems.</p>	Military & Veteran Affairs
NC Clean Energy Plan Implementation	The DMVA will be considering Solar System implementation and Green Roof feasibility in the planning of the Wake County State Veteran Home in 2021.	Military & Veteran Affairs
Agency Building Utility Consumption Reduction (EO80 Section 8)	<ul style="list-style-type: none"> • DMVA has required that all appliances and fixtures purchased by State Veteran Nursing Homes be EnergyStar rated when possible. • 2 of the 4 State Veteran Nursing Homes have Single Pipe Geothermal HVAC systems. 	Military & Veteran Affairs

C. DMVA Climate Resilience Activities

A. Community Assistance Activities

Table J-2: DMVA Actions Related to Community Assistance

Initiative Title	Description	Division/Lead Program Office
Veteran Affairs Offices	The DMVA currently has offices in the majority of counties throughout the state that assist Veterans, and Veteran Families	Veteran Affairs

XI. Department of Agriculture and Consumer Services

A more resilient agriculture and forest landscape contributes significantly to a more resilient North Carolina while also mitigating the effects of climate change. The North Carolina Department of Agriculture and Consumer Services (NCDA&CS) has significant and diverse activities and programs across its 21 divisions which all have a goal of creating a more resilient and economically viable future for North Carolina. NCDA&CS is a large and complex agency which impacts land use, food production, food safety, consumer safety, and forest management in all 100 counties. The department's influence on resiliency and climate change happens in so many ways that it would be easier to answer the question of "which NCDA&CS programs have no effect on climate change?" than asking which do. In this report we highlight some of the more visible as well as some of the subtler ways that NCDA&CS helps North Carolinians create a more resilient future.

Wildfires pose a serious threat to the well-being of communities across the state and the risk is exacerbated by extreme climate events such as drought and high temperatures. Preventing wildfires in North Carolina begins with sound forest management and educational programs built around identifying and removing hazards. The NC Forest Service assists landowners and homeowners to manage the fuel loading in the rural and urban landscape, mitigate risks, and incentivizing actions and practices which will prevent wildfires. Educational programs are key to helping people understand ignition sources, risks, and management across the landscape.

Agricultural research is critical to our food and fiber production being adaptive to climate change while also contributing less to the factors which accelerate climate change. Advancements in agriculture, even the most incremental, contribute to a more resilient food system. In partnership with NC State University, NCDA&CS manages the 18 research stations across North Carolina. Over 500 projects each year investigate improving crop and animal production as well as study the environmental effects of agriculture. These trials include heat mitigation and tolerance in livestock, feed efficiency, crop breeding, disease/insect management, food safety, soil health and water management in cropping systems. Of note, North Carolina is a world leader in the development of improved crop varieties which are adaptive to climate change.

Resilient landscapes must manage water on a daily basis for people and food production as well as during extreme events such as hurricanes. Through its Soil and Water Division, NCDA&CS has a myriad of programs focused on water management. In partnership with 98 local entities, the stream debris removal program has completed or is contracted to clear impediments on 2,140 miles of streams since 2019 in North Carolina to allow the landscape to drain and provide healthy aquatic environments. The Soil and Water Division also provides technical assistance and cost-share for on-farm water storage, irrigation efficiency, cover crops and soil conservation programs, and improving soil health across the state. Because of the strong partnership with the Natural Resources Conservation Service of USDA, the investments made by North Carolina tax dollars in Soil and Water are leveraged and multiplied to increase resiliency in our natural landscape.

Resiliency to climate change can also be achieved through less obvious and subtle means which improve stewardship of resources while providing economic resiliency in our food systems. NCDA&CS helps contribute to a more resilient North Carolina by providing consultative and testing services for farmers to increase efficient utilization of fertilizer and animal waste in partnership with the Department of Environmental Quality and Cooperative Extension. The department also assists aquaculture producers in stewardship of the water resources for production. The Plant Industry Division operates the Plant Conservation Program which seeks to protect endangered and rare species. The division manages over 16,000 acres across the state on tracts which hosts rare and endangered plant species in their native

environment, while also protecting the state from invasive species which can overrun and disrupt ecosystems and agriculture.

Chief Deputy Commissioner,

N. David Smith