



# Resilient North Carolina

## A Department of Environmental Quality Viewpoint

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# Background

- Resilience – The capacity to recover quickly from difficulties; toughness.
- *A resilient North Carolina is a state where our communities, economies, and ecosystems are **better able to rebound, positively adapt to, and thrive** amid changing conditions and challenges, including disasters and climate change; **to maintain and improve quality of life, healthy growth, and durable systems; and to conserve resources** for present and future generations.*
- Resilience – From where did it come as a topic to be discussed in current forums?

# *It all Started with: Executive Order No. 80*

## *North Carolina's Commitment to Address Climate Change and Transition to a Clean Energy Economy*



- Recognizes that climate change is affecting the health and welfare of our residents, economy, environment and our natural and built infrastructure.
- **Recognizes that we must take an active role in combatting climate change and make our state more resilient to its impacts.**
- Calls for clean energy technology innovations, workforce development, and a modern, smart electric grid to grow the state's economy while making North Carolina a national leader in clean energy solutions.
- Recognizes that we can protect our communities, grow our economy, and ensure a healthy environment at the same time.

# *N.C. Climate Change Interagency Council*

**Composition:** The secretary or designee of each cabinet agency and a representative of the Governor's Office

**Council Chair:** Secretary, N.C. Department of Environmental Quality

**Council Duties:**

- Recommend new and updated goals and actions to meaningfully address climate change
- Develop and implement programs and activities that support climate mitigation and adaptation
- Consider stakeholder input when developing recommendations, programs, and activities
- Schedule, monitor, and provide input on the preparation and development of the plans and assessments required by EO 80
- Review and submit to the Governor EO 80 plans and assessments



*EO80 Section 9- Climate Science, Impacts, Risks,  
Adaptation, and Resiliency*

# *Directives*

## **Department of Environmental Quality & Cabinet Agencies**

- **N.C. Climate Risk Assessment and Resiliency Plan** - provide a scientific assessment of current and projected climate impacts on North Carolina and prioritize effective resiliency strategies. **Completed Mar. 1, 2020.**

## **All Cabinet Agencies Including DEQ- Assess and Address Climate Change**

- Evaluate the impacts of climate change on agency programs and operations
- Integrate climate change mitigation and adaptation practices into agency programs and operations
- Support communities and sectors vulnerable to climate change impacts



# Where are we now?

- **2021 DEQ Agency Resilience Strategy – Completed March 1, 2021 – Implementing now**
- **NC Climate Change Resiliency Council**
- **Interagency Resilience Team**
- **Recovery Support Function Group 7: Environmental Preservation**

# Tools to use to move forward:

- North Carolina Climate Risk Assessment and Resilience Plan ([NCRARP](#))
- North Carolina DEQ 2021 Agency Resilience Strategy ([Annual Strategy Report](#))
- All contributing agencies Annual Strategy Reports ([All Agency Strategies](#))
- [North Carolina Climate Science Report](#)



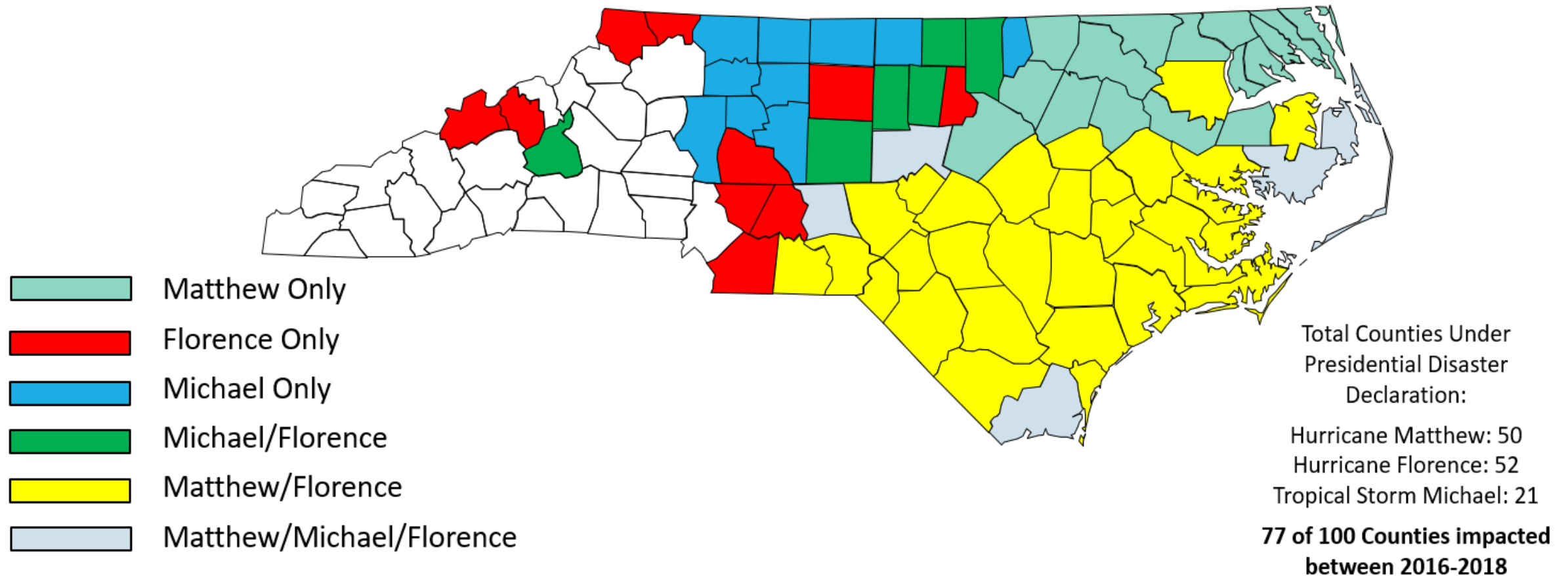


# Quick Review: What are we trying to prevent?

## Hurricane Florence Impacts



# Widespread impacts: Matthew, Michael, Florence

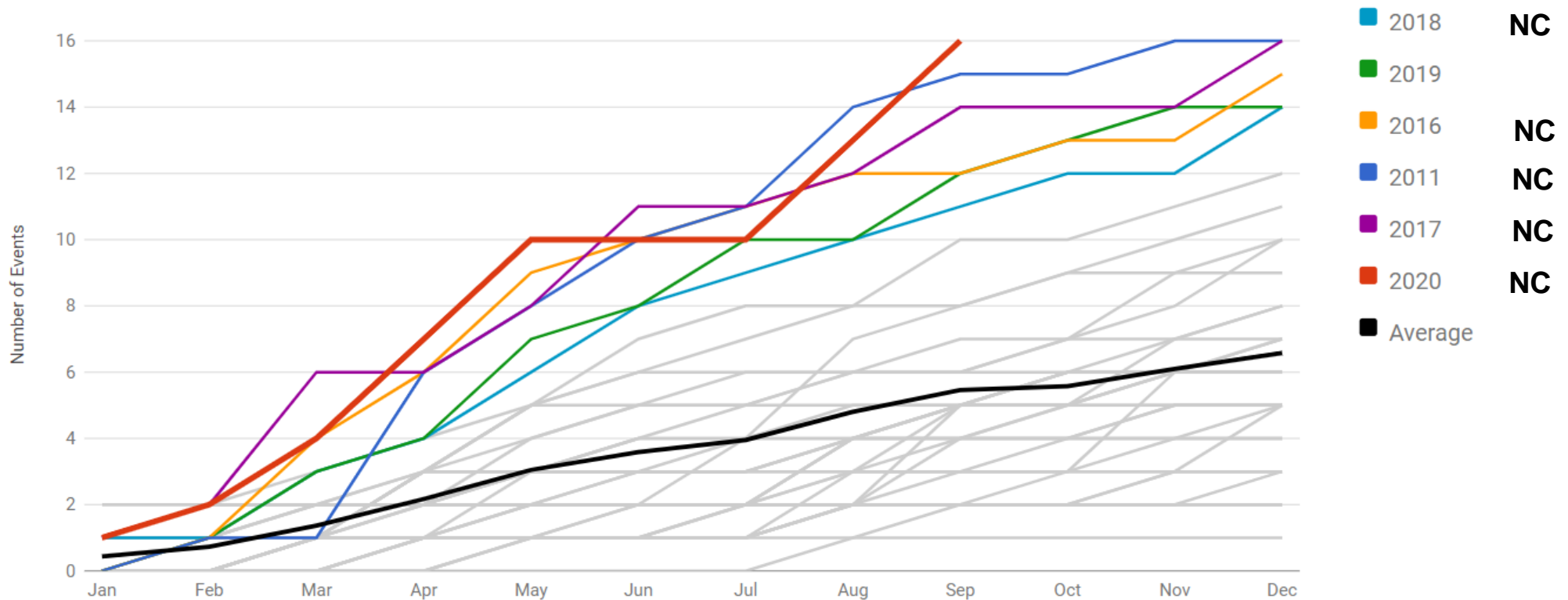


# *What are we trying to prevent?*

## *Frequency of Billion-Dollar Disaster Events in the U.S.*

1980-2020 Year-to-Date United States Billion-Dollar Disaster Event Frequency (CPI-Adjusted)

Event statistics are added according to the date on which they ended.



Statistics valid as of October 7, 2020.

Source: National Oceanic and Atmospheric Administration, <https://www.ncdc.noaa.gov/billions/>

# Planning and Strategies



- Annual Report by each Department with goals and objectives
- Setting Foundations: Identifying resource needs and implementing
- Continuous Assessment, Follow-up and Grow to Maturity
- Re-Assessment of what has been done and set new goals



# 2021 DEQ Agency Resilience Strategy – Completed March 1, 2021

***"Each Division has highlighted in this report the many and varied priorities that not only help accomplish the base duties and expectations of their programs as outlined by statute, rule, policy and demand but a number of priorities that the Department sees as having a key role in moving North Carolina into a "State" of resilience and away from a state of reaction."***





# 2021 DEQ Agency Resilience Strategy – Completed March 1, 2021

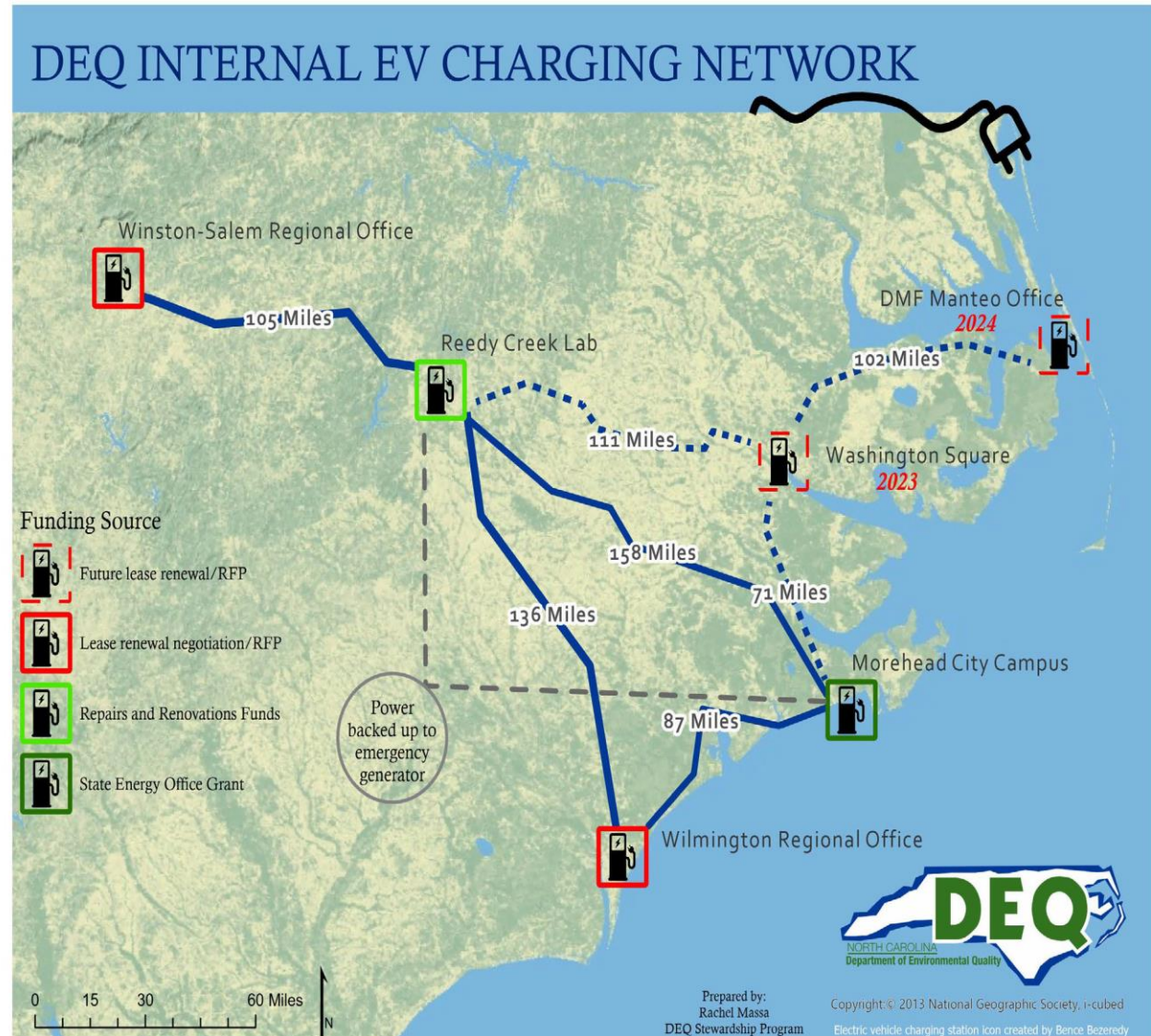
***"We are actively involved in Interagency Council meetings, are dedicated to coordinating with the Interagency Resilience Team to work on cross-sector resilience strategies and are actively leading and participating in the Environmental Preservation Response Support Function group of the State Disaster Recovery Framework. DEQ sees all of these efforts as important and necessary to effectively accomplish the resilience goals as identified in EO80."***

***The following are a few of those strategies by Division or Program:***



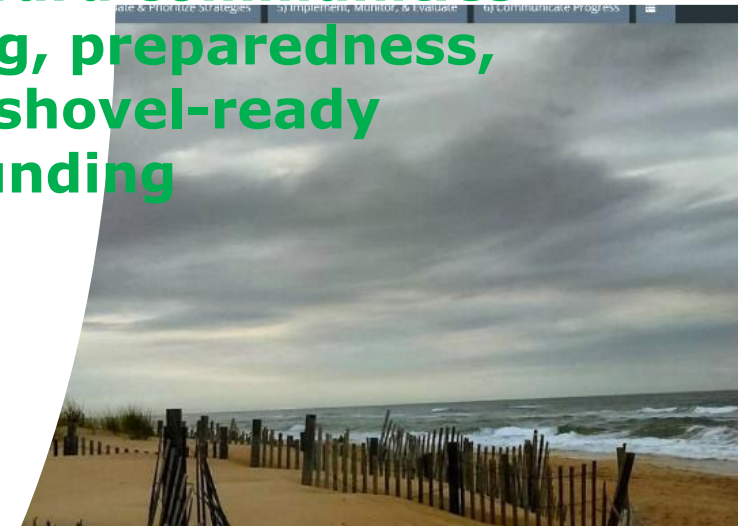
# Electric Vehicle Foundations

- Installation of EV charger network
  - Six new EV chargers were set up in on DEQs Reedy Creek Campus in September 2021 as the first set of several to be installed at DEQ owned facilities over the next 12-24 months.
  - Critical infrastructure like this is needed to move into the future and help affect change.



# 2021 DEQ Agency Resilience Strategy – Coastal Management

- **DCM has built a website that hosts tools to help planners assess vulnerability and continues to coordinate the NC Sea Level Rise Assessment Reports. DCM has also partnered with Emergency Management to double the number of tide gauges that can be used to measure long-term sea level rise.**
- **DCM, in partnership with NCORR and others, created the Resilient Coastal Communities Program to incentivize and reward communities for meeting defined standards for long-term planning, preparedness, and community engagement, and help them to plan shovel-ready projects in order to capitalize on federal and state funding opportunities.**





# 2021 DEQ Agency Resilience Strategy – Energy, Mineral, and Land Resources



- **Continue the study of hydrologic and hydraulic (H&H) capacity and overtopping of 550 large and very large dams identified in the Neuse, Lumber and Cape Fear River Basins.**
- **Continue the Landslide Mapping Program in the NC Geological Survey. This provides maps, updates, emergency response and maintains a landslide geodatabase which is accessible in a public interactive web map viewer.**
- **NEW North Carolina PMP Study**



# 2021 DEQ Agency Resilience Strategy – Mitigation Services

- **DMS received legislative authority to develop a program which will create and address flood storage using nature-based solutions. The division is establishing an Advisory Board and applying for grants to develop pilot projects and test cases in the middle-Neuse river basin. These efforts aim to determine the goals, strategies, and funding sources for this new program.**





# 2021 DEQ Agency Resilience Strategy – Waste Management

- **DWM will continue to work with local, state, and federal partners to participate in and conduct training and to provide guidance via workshops and division webpages. DWM field staff have continued to work with local governments on an individual basis to establish new disaster debris sites.**



# 2021 DEQ Agency Resilience Strategy – Water Resources

- **Evaluate potential for statewide buffers to mitigate against the effects of extreme storm events. Buffers can filter and absorb excess runoff from heavy rain events and forested buffers provide a natural cooling effect when ambient air temperatures increase, protecting stream habitat and water quality.**
- **Coordinate with USGS and other stakeholders to recalculate 7Q10 and other flow statistics statewide. Perform an assessment of changes to 7Q10 values to understand potential future dry weather flows. 7Q10 is used to calculate wasteload allocations from NPDES permitted facilities, determine water supply availability, and assess ecosystem habitat.**



# 2021 DEQ Agency Resilience Strategy – State Energy



- Development of emergency micro-grids in communities of high impact by hurricanes and flooding. This entails identifying areas with community needs: Food and Groceries, Fuel, Pharmacies, Financial Institutions and planning and implementation of improving resilience in these locations to that power, if lost, is restored as a priority location for the community to be able to obtain its base needs following a natural disaster.

# NC Climate Change Resiliency Council

- The heads and appointees of each cabinet level agency continue to meet to receive and provide reports on the ongoing accomplishments of the agencies as they work to fulfill the recommendations provided by the 2020 Risk Assessment and Resilience Plan (RARP)
- Guidance to the agencies and IRT on framework, coordination and communication.
- Partnered and Led by DEQ



# Interagency Resilience Team

- This Team is made up of the appointed staff members within each partnering Department to coordinate efforts, prevent silos and seek to build a resilient state framework to address the multitude of efforts needed (flooding impacts, transportation, energy, health, drought, ecology, etc....)
- DEQ is key participant in this





# Recovery Support Function Group 7: Environmental Preservation

- RSF& - Formed by the NC Disaster Recovery Framework
- Made up of Key State Agencies and volunteer NGOs
- Led by DEQ and NCORR
- Recommend strategies, framework and projects to provide for a resilient NC and to complement the goals of EO80 as they relate to Disaster Recovery



# Where are we going?

## The Steps to Resilience



U.S. Climate  
Resilience Toolkit  
[toolkit.climate.gov](https://toolkit.climate.gov)

1 Explore Hazards

2 Assess Vulnerability & Risks

3 Investigate Options

4 Prioritize & Plan

5 Take Action

→ Did you know?  
→ Why should I care?  
What can we do about it?



## *A Resilient North Carolina*

North Carolina  
Climate Change Interagency Council

# Questions?

## North Carolina Department of Environmental Quality

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