INTERACTIVE WEBINAR

August 18th, 2020
Regional Resilience Workshops and Summit Follow-up

Tancred Miller, Policy & Planning Section Chief
NC Division of Coastal Management
August 18th, 2020
May 2nd
Northeast Regional Resilience Workshop

May 14th
Southeast Regional Resilience Workshop

June 11-12th
Coastal Resilience Summit
Havelock, NC
Goals:

• Inform the development of the NC Coastal Climate Risk Assessment and Resilience Plan
• Support understanding and preparedness for short- and long-term hazards affecting communities
• Showcase a range of existing solutions to address identified challenges
North Carolina Coastal Resilience Summit

Panel Topics:

• The Relationship of Climate Change to Coastal Hazard Risk
• Resilient Tourism-Based Coastal Communities
• Strengthening our Roots: Natural & Working Lands
• Military Strategies and Perspectives
• Climate Ready & Productive Estuaries
• Resilience for ALL During Long-Term Recovery
• Helping Nature Help Us
• Smart Critical Systems and Built Environment
• Resilience Innovations: Financing Opportunities
• Building Partnerships for Success
Northeast Regional Resilience Workshop

Recipe for Resilience:
- Dr. Jess Whitehead, N.C. Sea Grant*

Managing & Measuring Change Part 1:
- Anne-Marie Knighton, Town of Edenton
- Holly White, Town of Nags Head
- Daniel Brinn, Hyde Soil and Water Conservation District

Managing & Measuring Change Part 2:
- Dr. Reide Corbett, Coastal Studies Institute/ECU
- Dr. Jared Bowden, SE Climate Adaptation Science Center at NC State
Southeast Regional Resilience Workshop

Recipe for Resilience:
- Dr. Jess Whitehead, N.C. Sea Grant*

Managing & Measuring Change Part 1:
- Andrea Correll, Town of Swansboro
- Jeremy Hardison, Town of Carolina Beach
- Gary McSmith, Cape Fear Public Utility Authority

Managing & Measuring Change Part 2:
- Dr. Larry Cahoon, UNC-Wilmington
- Dr. Jared Bowden, SE Climate Adaptation Science Center at NC State
The State is developing a Climate Risk Assessment and Resiliency Plan for 2020. What are the key issues or topics you think it should address?
Question #1: How is your community affected by natural hazards & long-term stressors?

- natural environment
- infrastructure & built environment
- vulnerable populations & social systems
- economic drivers
Question #1: How is your community affected by natural hazards & long-term stressors?

- Salt-water intrusion
- Prolonged flooding and runoff
- Harmful algal blooms and septic issues
- Length of time for forest recovery
- Storms removing beach nourishment
- Degraded ecosystem services
- Shoreline/riverine erosion
- Water quality degraded from runoff
- Shoaling
- Drainage ditches inadequate
Question #1: How is your community affected by natural hazards & long-term stressors?

- Sewer and wastewater system failures
- Rising water table threatens septic viability
- Reliance on ocean outfalls for stormwater
- Road/highway damage & disruption
- More impervious increases flooding
- Capital budgets not designed to handle full replacement
- Retrofitting more challenging in rural communities
- Transportation design standard inadequate
- Focus is on rebuilding quickly, not stronger
Question #1: How is your community affected by natural hazards & long-term stressors?

- Communicating risks to non-permanent residents, absentee owners, & new buyers
- Preserving tax base through elevations
- Housing loss: pressure on receiving counties
- Communications during power loss
- Physical and psychological impacts may be ‘under the radar’
- Complexity of recovery assistance framework more challenging to navigate for socially vulnerable

vulnerable populations & social systems
Question #1: How is your community affected by natural hazards & long-term stressors?

- Lower tax value for repetitive loss properties
- Lost occupancy taxes
- Fisheries & agricultural losses = higher prices
- Workforce displacement
- Higher insurance, utilities, & housing costs
- Community aesthetics and mood affected
- Loss of “safe” areas for development
- Funding streams get backlogged during recovery
Question #2: What are some potential strategies?

- Infrastructure and nature-based solutions
- Policy and regulation
- Local and regional plans
- Education, awareness & incentive programs
Question #3: How should the state support local efforts?

- Funding (grants, loans, appropriations)
- Technical assistance
- Data/research needs
- Education, training, and outreach
- Regulatory and policy changes (barriers and incentives)
- Staff resources/capacity
Question #3: How can the state better support communities in addressing climate hazard risks and impacts?

- Provide a one-stop-shop for resiliency resources (data, training, funding, listserv, templates, BMPs)
- Show State leadership as mandate for communities to address topics that may be difficult otherwise
- Develop a future floodplains map product to inform and help manage risk
- Create a portal for contact information in all communities (phone tree with backup contacts)
- Implement a uniform resiliency planning framework
- Streamline hazard mitigation programs
- Provide more regional training and staff support on resiliency/climate adaptation
- Incentivize resilient best practices (streamlined permitting, tax and financial incentives)
- Help communities identify resilient redevelopment strategies before a disaster, to be able to recover stronger
- Create a Clearinghouse of benefit-cost analyses, long-term ROI fast facts, or matrix of green-gray infrastructure solutions
Building a Resilient North Carolina
NC Resilient Coastal Communities Webinar

Jessica Whitehead, Ph.D.
Chief Resilience Officer
On October 29, 2018, Governor Cooper established the North Carolina Climate Change Interagency Council as part of Executive Order No. 80. North Carolina’s Commitment To Address Climate Change And Transition To A Clean Energy Economy:

The Secretary or designee of each cabinet agency and a representative from the Governor’s Office shall serve on the North Carolina Climate Change Interagency Council (“Council”), which is hereby established. The Secretary of the North Carolina Department of Environmental Quality, or the Secretary’s designee, shall serve as the Council Chair. The North Carolina Department of Environmental Quality shall lead the Council by providing strategic direction, scheduling and planning Council meetings, determining the prioritization of activities, facilitating stakeholder engagement, and assisting in the implementation of pathways to achieve the goals provided in Section 1 of this Executive Order.

2020 NC Climate Risk Assessment and Resilience Report

Climate science assessment

Goal 1a
Dec 2019

Science Report
Lead: DEQ
Cabinet agencies
NCICS, NC Climate Science Advisory Panel

NC Climate Science Report

Goal 1b
Oct 11, 2019

Hazard Identification
Lead: DEQ
Cabinet agencies
NOAA, NEMAC, NCICS

Agency Workshop 1
Hazard/Asset Matrix

Goal 2
Dec 2019

Risk Assessment
Lead: DEQ
Cabinet agencies
NOAA, NEMAC, NCICS

Agency Workshop 2
NC Climate Risk Assessment

Exposure to climate-related hazards

Assess Vulnerability and Risks

Develop Actions

June 2020
(COVID-19)

State Agency Strategies
Lead: DEQ
Cabinet agencies, NOAA, NEMAC, NCICS

Regional Resiliency Workshop Reports

Local Government Strategies
Lead: DEQ, COGs, Cabinet agencies
NGOs, local government, NOAA, NEMAC

NWL Recommendations Report

Recovery and Resilience Support Strategies
Lead: NCORR
State Disaster Recovery Task Force members

NC Resilience Report

Nature Based Solutions
Lead: DEQ, Natural & Working Lands Stakeholders

Nature Based Solutions
Local Government Input

Participant Groups
• Local government officials
• Local Planners
• Community Organizations
• Business, Commerce, and Agriculture
• Supporting Organizations
• State agencies

Focus Areas
• Public Health
• Agriculture/Business/Commerce
• People and Community
• Environment and Natural Resources
• Local Planning
• Transportation

Regional Resilience Workshop
November 7, 2019
9:00 am to 4:00 pm
Lumber River Council of Governments
30 CJ Walker Road
COMtech Park
Pembroke, NC 28372

Expected Attendees
• City, Town, and County
  Officials
• Elected Officials
• Businesses
• Environmental Groups
• Councils of Governments
• Community and Faith-
  Based Organizations
• Tribal Representatives

The N.C. Department of Environmental Quality, along with its many governmental, private and non-profit partners are bringing together stakeholders and experts to help shape priorities of the State Climate Risk
Assessment and Resilience Plan under Governor Cooper’s Executive Order 80.
This workshop will help the team share information about impacts and solutions as well as learn from communities about their greatest resilience challenges in order to guide future state resiliency planning and investments.

CLICK HERE TO REGISTER!
Cost is Free but Space is Limited!
Lunch Provided to all Attendees
AICP/CEMF Credits Available

QUESTIONS?
For questions about the workshop or registration:
David Milburn - Executive Director, Lumber River CCG
(910) 721-3150
david_milburn@nc.org
Vision of Resilience

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.
NC Climate Science Report

Projected Changes in Annual Number of Extreme Precipitation Events
Days with Precipitation ≥ 3 Inches

(a) Higher Scenario (RCP8.5), 2021–2040
(b) Lower Scenario (RCP4.5), 2041–2060
(c) Higher Scenario (RCP8.5), 2041–2060

Change (%) in Number of Days
-20 0 20 40 60 80 100

Global State of the Science
Historical Changes in NC
Projections for NC

NC Climate Science Report
(Kunkel et al. 2020): https://ncics.org/programs/nccsr/
North Carolina Resilience Plan

Executive Summary
1. Key Findings and Recommendations
2. Resilience Plan Development Process
3. NC Climate Science Report Summary
4. Climate and Environmental Justice
5. Vulnerability, Risk, and Potential Options for Addressing Climate-Related Hazards
6. Nature-Based Solutions to Resilience
7. Path Forward

North Carolina Climate Risk Assessment and Resilience Plan
Impacts, Vulnerability, Risks, and Preliminary Actions

Science Report Contributors: 50+
Sector Strategy Developers: 200+
Community Workshops Participants: 300+
NWL Stakeholders: 100+

June 2020
NC Resilience Plan: Path Forward

Local Government and Community Assistance

Goal 4
On going

Local and Regional Resilience Plans & Actions
Lead: NCORR
Cabinet agencies, COGs, local governments, NGOs

Local Government Assistance Tools, Funding, Resources, etc.

NC Resilience Plan: Path Forward

Local and Regional Resilience Plans & Actions

Lead: NCORR
Cabinet agencies, COGs, local governments, NGOs

Local Government Assistance Tools, Funding, Resources, etc.

Goal 4
On going

Local Government and Community Assistance

NC Resilience Plan: Path Forward

Local and Regional Resilience Plans & Actions

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Local Government Assistance Tools, Funding, Resources, etc.

Goal 4
On going

Local Government and Community Assistance

NC Resilience Plan: Path Forward

Local and Regional Resilience Plans & Actions

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Cabinet agencies, COGs, local governments, NGOs

Local Government Assistance Tools, Funding, Resources, etc.

Goal 4
On going

Local Government and Community Assistance

NC Resilience Plan: Path Forward

Local and Regional Resilience Plans & Actions

Lead: NCORR
Cabinet agencies, COGs, local governments, NGOs

Local Government Assistance Tools, Funding, Resources, etc.

Rebuild NC is a program of the North Carolina Office of Recovery and Resiliency.
Resilient NC Guiding Principles

1. Act quickly and decisively to reduce the most harmful impacts of climate change—flooding, drought, landslides, and wildfires

2. Act thoughtfully and collaboratively to develop equitable solutions for the most socially challenging effects of climate change

3. Invest in safe, affordable, and connected communities

4. Strengthen regional economies

5. Support healthy communities, local identity, and recreational access to nature

6. Implement resilience best practices
Cross-sector Resilience Strategies

- Consider resilience criteria in making investments
- Update plans, standards, and design values
- Increase resilience capacity in state agencies and at local governments
- Identify sustainable funding sources for building resilience
- Increase communication, outreach, and engagement on resilience needs and solutions
Priority Initiatives

- Manage and coordinate statewide resilience
- Convene a dedicated Interagency Resilience Team
- Continue resilience efforts through the North Carolina Climate Change Interagency Council
- Establish the NC Resilient Communities program
  - Online Climate Resilience Clearinghouse and Toolbox
  - Resilience training programs for communities
  - Establish NC Resilient Communities Grant Program

Pilot grant opportunities: NFWF (DCM); EDA (NCORR)
THANK YOU

JESS WHITEHEAD, Ph.D.

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North Carolina
RESILIENT
COASTAL COMMUNITIES
PROGRAM

Sam Burdick, Coastal Resilience Coordinator
Outline

• Overview
• Scope
• Guiding Principles & Objectives
• Framework
• Timeline
• Next Steps
How it all started

- N.C. Climate Risk Assessment & Resilience Plan
- State Legislature Funding
- NFWF Emergency Coastal Resilience Fund
Program Scope
Program Objectives

- Address barriers to resilience at the local level;
- Assist communities with risk & vulnerability assessments and developing a portfolio of well-planned and prioritized projects;
- Advance coastal resilience projects to “shovel-ready” status; and
- Link communities to funding streams for project implementation.
Guiding Principles

- Increase local capacity and capability for resilience planning and implementation
- Incentivize a data and community-driven process
- Provide tools to address social inequities and support underrepresented populations
- Reduce costs to communities
- Meet communities where they are
Program Phases

PHASE 1
Community Engagement and Risk & Vulnerability Assessment

PHASE 2
Planning, Project Selection, and Prioritization

PHASE 3
Engineering & Design

PHASE 4
Implementation
PHASE 1: Community Engagement

• Develop an Action Team
  • Actively participates in the program

• Public engagement
PHASE I:
Risk & Vulnerability Assessment

- Coastal *and* Riverine Flooding
  - Precipitation, storm surge, and SLR projection scenarios
- Future land use
- Social vulnerability
- Community assets
PHASE 2: Planning, Project Selection, & Prioritization

- Resilience Strategy
  - Risk and Vulnerability Assessment
  - Project Portfolio
Project Portfolio

- Infrastructure and Nature-Based
- Local Policy and Regulation
- Local and Regional Plans
- Education, Awareness, and Incentives
Meeting your community where you are and getting you where you want to be
Project Prioritization

- Resilience Prioritization Criteria Assessment Tool
Direct, non-financial **technical assistance**

- Communities submit pre-application in response to an Invitation to Apply
- Consultants, COGs, and universities submit response to Request for Qualifications
PHASES 3 & 4:

Grants: Natural (Green) or Hybrid Infrastructure focus

- PHASE 3: Engineering and Design
- PHASE 4: Implementation
Natural and Hybrid Infrastructure

- **Natural infrastructure**: wetlands, forests, beaches, dunes, rivers, and other ecosystems
- **Nature-based, or “green” infrastructure**: engineered systems that mimic natural processes
- **Hybrid infrastructure**: contain both green and grey infrastructure components
HOW GREEN OR GRAY SHOULD YOUR SHORELINE SOLUTION BE?

GREEN - SOFTER TECHNIQUES

VEGETATION ONLY - Provides a buffer to upland areas and breaks small waves. Suitable for low wave energy environments.

EDGING - Added structure holds the toe of existing or vegetated slope in place. Suitable for most areas except high wave energy environments.

SILLS - Parallel to vegetated shoreline, reduces wave energy, and prevents erosion. Suitable for most areas except high wave energy environments.

BREAKWATER - (vegetation optional) - Offshore structures intended to break waves, reducing the force of wave action, and encourage sediment accretion. Suitable for most areas.

GRAY - HARDER TECHNIQUES

REVENTMENT - Lays over the slope of the shoreline and protects it from erosion and waves. Suitable for sites with existing hardened shoreline structures.

BULKHEAD - Vertical wall parallel to the shoreline intended to hold soil in place. Suitable for high energy settings and sites with existing hard shoreline structures.

NOAA Habitat Blueprint Shoreline Solution Continuum
North Carolina Resilient Coastal Communities Program

TIMELINE

FY 2020

Q1
Phase 1 & 2 Applications / RFQs

Q2
Communities Selected

Q3
Phase 1

Q4
Phase 3 & 4 Projects Selected

Q5
Phase 2

Q6
Resilience Strategies due

Q7
Phase 3 & 4 Applications

Q8
FY 2021

Q9
Phases 3 & 4

Q10
Contracts Expire

Q11
Projects Finalized

Q12
Projects Finalized

FY 2022

FY 2023

North Carolina Resilient Coastal Communities Program

Program Development

Communities Selected

Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q1
Q2
Q3
Q4
FY 2020
FY 2021
FY 2022
FY 2023

2020-2023
Next Steps

- Public comment period
- Aug – Sept: Finalize Program Curriculum
- Sept – Oct: Issue Invitations to Apply communities; RFQ to consultants, universities, and COGs
Program Contacts

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