



SNC • LAVALIN

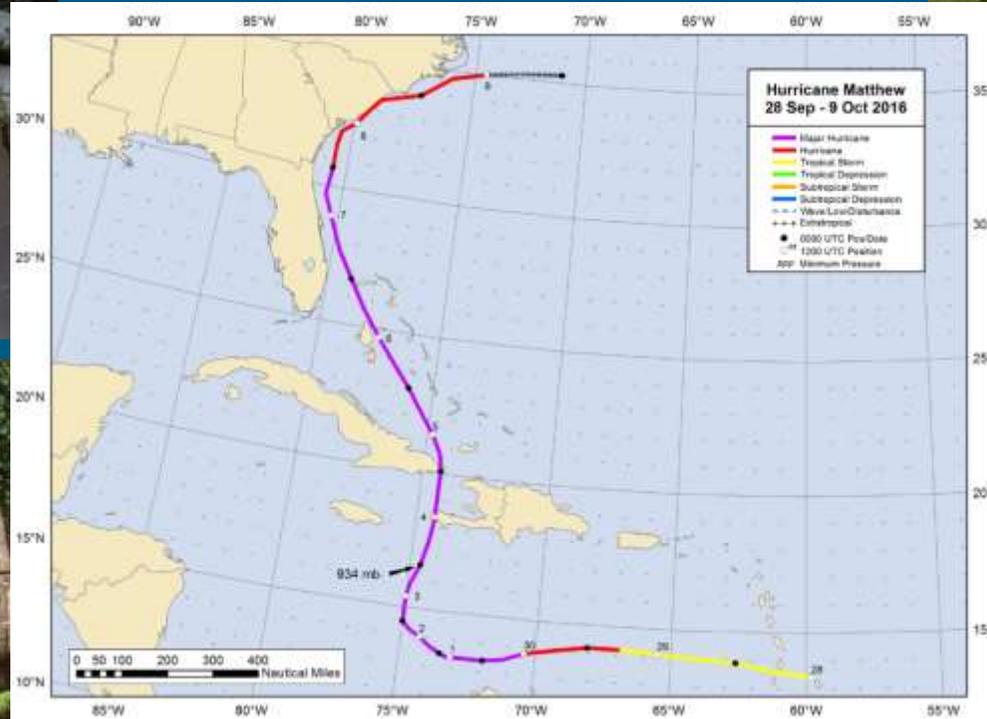
ATKINS

Member of the SNC-Lavalin Group

How Hurricane Matthew Helped NC Think Differently About Recovery and Resilience Planning

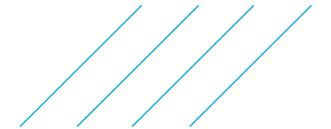
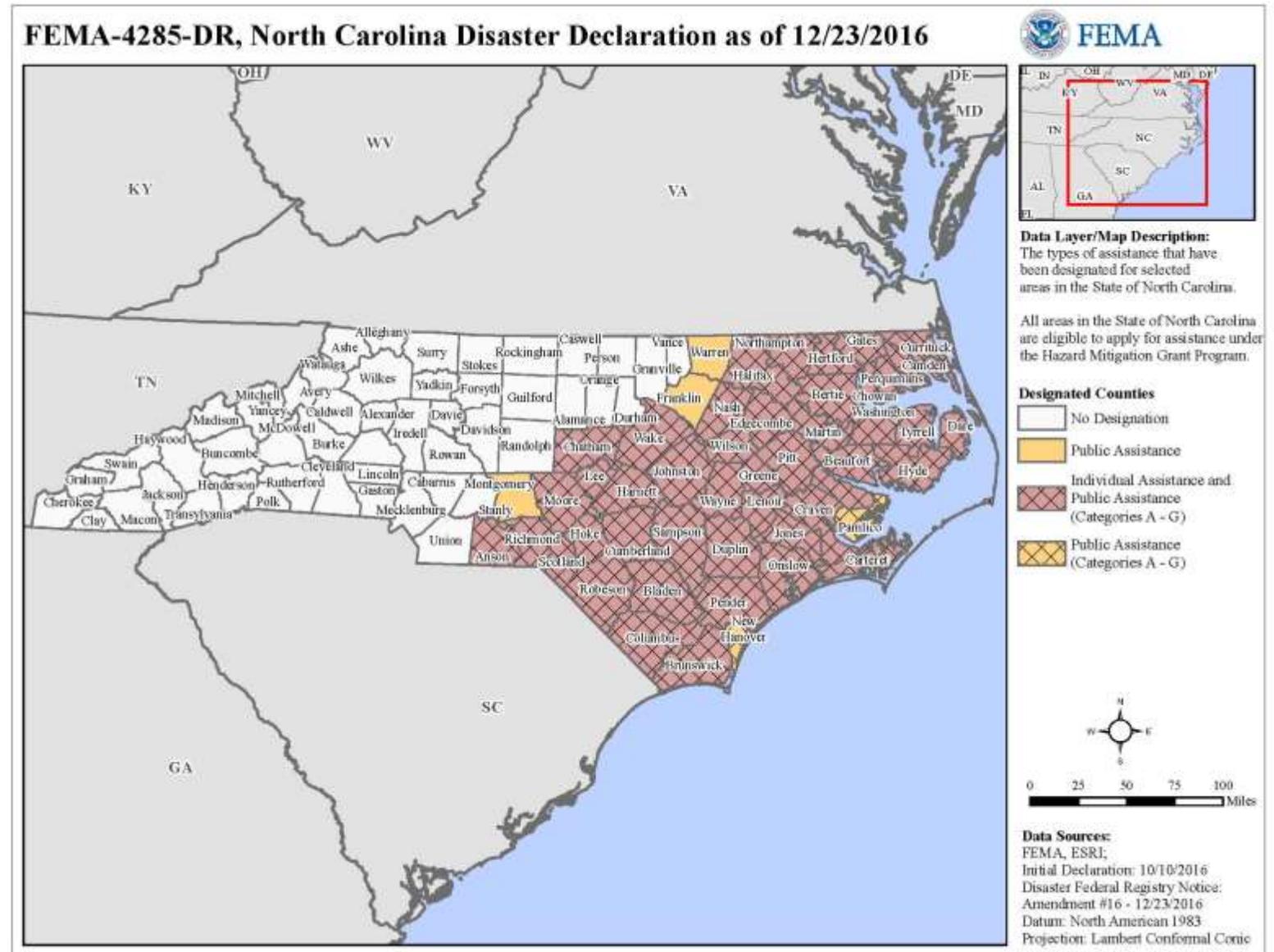
Stacy Wright
ASFPM Conference
June 21, 2018

Hurricane Matthew 2016



Area Impacted

- › 50 Counties
- › Sandhills, Coastal plain and Coastal areas
- › Mix of rapidly growing urban areas (ex. Fayetteville, Pinehurst, Clayton, Goldsboro, Wilmington) and fairly rural communities
- › Generally flat topography and prone to stormwater issues-leading to flooding outside SFHA
- › Variety of local capability levels

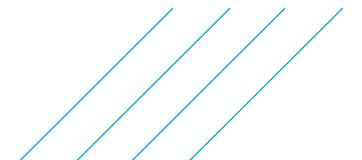


Hurricane Matthew Disaster Recovery Act of 2016

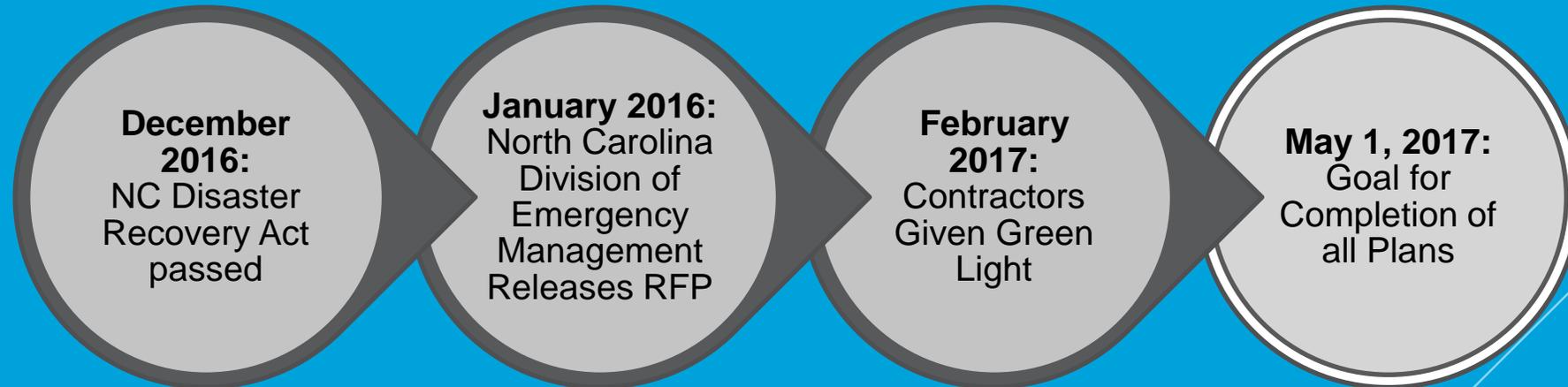
- › Allocated roughly \$200 million in funds to help NC citizens recover from Hurricane Matthew
- › Included the establishment of the North Carolina Resilient Redevelopment Planning (NCRRP) program to help 50 impacted counties develop a roadmap for rebuilding



Photo Credit: Rena Turner, NC House District 84



Jumping Right In...



Goals of Program

Understand the Impacts from Hurricane Matthew

+

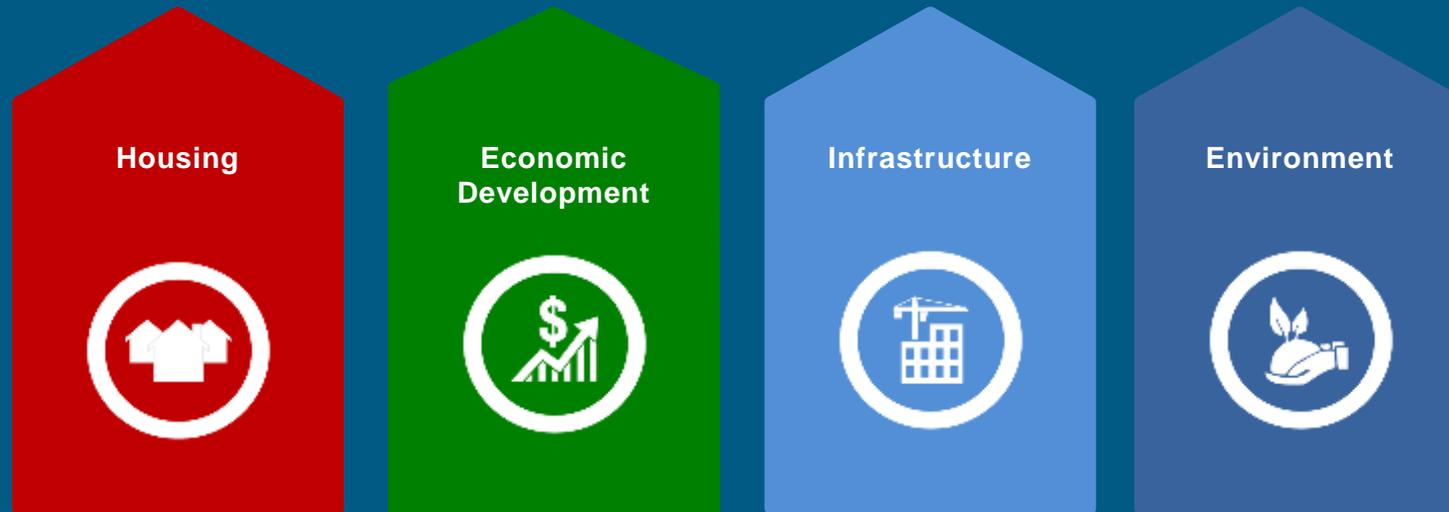
Identify Unmet Needs

+

Develop Potential Strategies/Projects

=

Basis for Asking for Funding Via CDBG-DR program and from NC General Assembly



Four Pillars of Resilient Redevelopment
As defined by the NC General Assembly in the Disaster Recovery Act

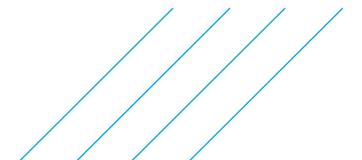
Team Members

NCEM built a team with diverse and relevant experiences. Backgrounds in...

- Mitigation Planning
- State and Federal Emergency Management
- Water Resources Engineering
- Transportation Planning/Engineering
- GIS
- Landscape Architecture
- Military Facility Planning

Combined to work with local community officials from...

- Planning/Community Development
- Emergency Management
- Public Works
- GIS
- Housing
- Regional Agencies
- Non-Profits
- County/City Boards



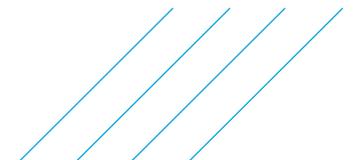
Resilient Redevelopment Planning Process 2017

- › 3 meetings in each county with local officials
- › 3 public meetings
- › 3 months to complete plan development



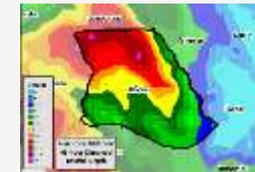
Program Overview Timeline

| Timeframe | Planning Step |
|--------------|---|
| Feb 10 | Resilient Redevelopment Plan Process Starts |
| Feb 27-Mar 3 | Initial Community/Public Meetings |
| Mar 6-24 | Consulting Teams Develop Draft Plans |
| Mar 27-31 | Second Community/Public Meetings |
| Apr 3-7 | Consulting Teams Revise Plans |
| Apr 10-14 | Third Community/Public Meetings |
| Apr 21 | Final Plans to NC Emergency Management |
| May 1 | Plans to NC General Assembly |

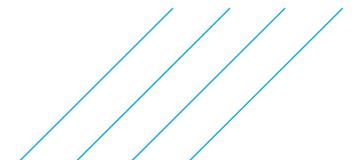


Meeting 1

- › Share State Data with Communities and Public
- › Receive Input on Impact Areas and Unmet Needs Using ArcGIS Online Tool
- › Begin Discussion of Strategies to Become More Resilient



Clockwise from top: (1) Identifying Impact Areas in ArcGIS Online (2) NCEM Rainfall Data (3) Hard Copy Maps for Breakout Discussions (4) Explaining Goals of Process

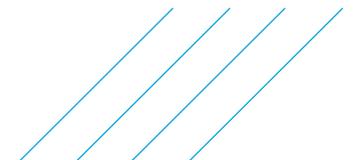


Meeting 2

- › Cardstorming Exercise to Identify Potential Strategies and Projects to Improve Resilience
- › Clarify and Further Refine Scope of Projects/Strategies
- › Site Visits to Some High Impact Areas



Clockwise from top left: (1) Cardstorming Board (2) Site Visit to Breached Dam (3) Cardstorming Project Ideas (4) Discussing first meeting

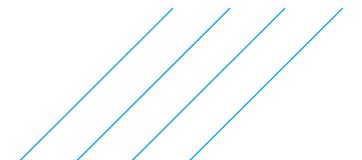


Meeting 3

- › Finalize Project Locations in ArcGIS Online and Define Specifics of Projects
- › Discuss Prioritization of Projects/Strategies

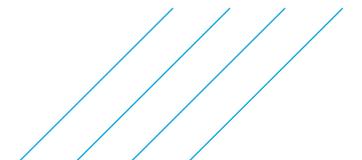


Clockwise from top left: (1) Proposed Park/Recreational Area Developed During Planning Process (2) Reviewing Final Maps (3) Previously Completed Culvert Project (4) Project Locations Mapped in ArcGIS Online with Impact Areas



Examples of Project Types Identified

- › Increase Affordable Housing
- › Stormwater Management System Improvements in Downtown Areas
- › Add Stream Gauges and Enhance Early Warning Network Among Dam Operators
- › Stream Restoration/Naturalization
- › Critical Facility Hardening/Relocation
- › Roadway/Bridge/Culvert Improvements
- › Increase Open Space through Parks/Natural Space



Statistics

50 Counties

~950 Total Strategies

>\$2B Total Cost Estimate of All Strategies

~\$2M Average Cost / Strategy

19 Average # Strategies per County

Rebuild NC Website

www.rebuild.nc.gov

The screenshot shows the ReBUILD NC website interface. At the top, there is a dark blue header with the 'ReBUILD NC' logo on the left and 'NC.GOV READY NC LOGIN' on the right. Below the header is a navigation bar with links for 'Home', 'Programs', 'Progress', 'Meetings', 'CDBG-DR', and 'Find Assistance'. The main content area features a breadcrumb trail: 'Home > Redevelopment Plans > Resilient Redevelopment Plan - Anson'. The title 'Resilient Redevelopment Plan' is prominently displayed, followed by 'Anson County'. A paragraph of text explains the purpose of the plan, referencing the Disaster Recovery Act of 2016 and the North Carolina Emergency Management (NCEM). A sidebar on the right contains a 'ReBUILD NC' logo and four menu items: 'Programs', 'Progress', 'Meetings', and 'Find Assistance'.

Plan Information

[Section I: Background](#)

- Hurricane Matthew Summary Storm Information
- State/Legislative Response
- Resilient Redevelopment Planning
- Data, Assumptions and Methodologies

[Section II: County Profile](#)

- Demographic Profile
- Infrastructure Profile
- Economic Business Profile
- Housing Profile
- Environmental Profile
- Administrative Profile
- Stressors/Vulnerabilities (Hotspots, Summary)

[Section III: Storm Impact](#)

- Housing
- Infrastructure
- Economics/Business/Jobs
- Ecosystems/Environment
- Summary of Critical Issues and Community Assets

Section IV: Strategies

- Housing Strategies
- Economic Development
- Infrastructure Strategies
- Environmental and Ecosystem Strategies

Section V: Appendices

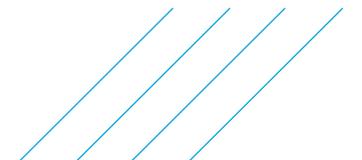
- Planning Process Documentation
- Potential Funding Sources
- Glossary

[Submit Your Feedback](#)



Lessons Learned

- › Mitigation planning in NC for many years, existing working relationships with many local communities helped us succeed
 - › Commitment to understanding unique community/public concerns
- › Many communities across the state are facing the same issues across both urban and rural areas
- › Money talks- the potential availability of funding for projects generated enthusiasm for the process and kept everyone focused on practical projects
- › Need to implement solutions to address inevitably recurring issues- this is the key to resilience!



Thank You!

Stacy Wright, AICP, CFM
Atkins, N.A.

Stacy.Wright@atkinsglobal.com