

North Carolina Flood Resiliency Blueprint

**Joint Legislative Committee on
Government Operations –
Subcommittee on Hurricane Response
and Recovery**

January 23rd, 2024



Elizabeth Biser

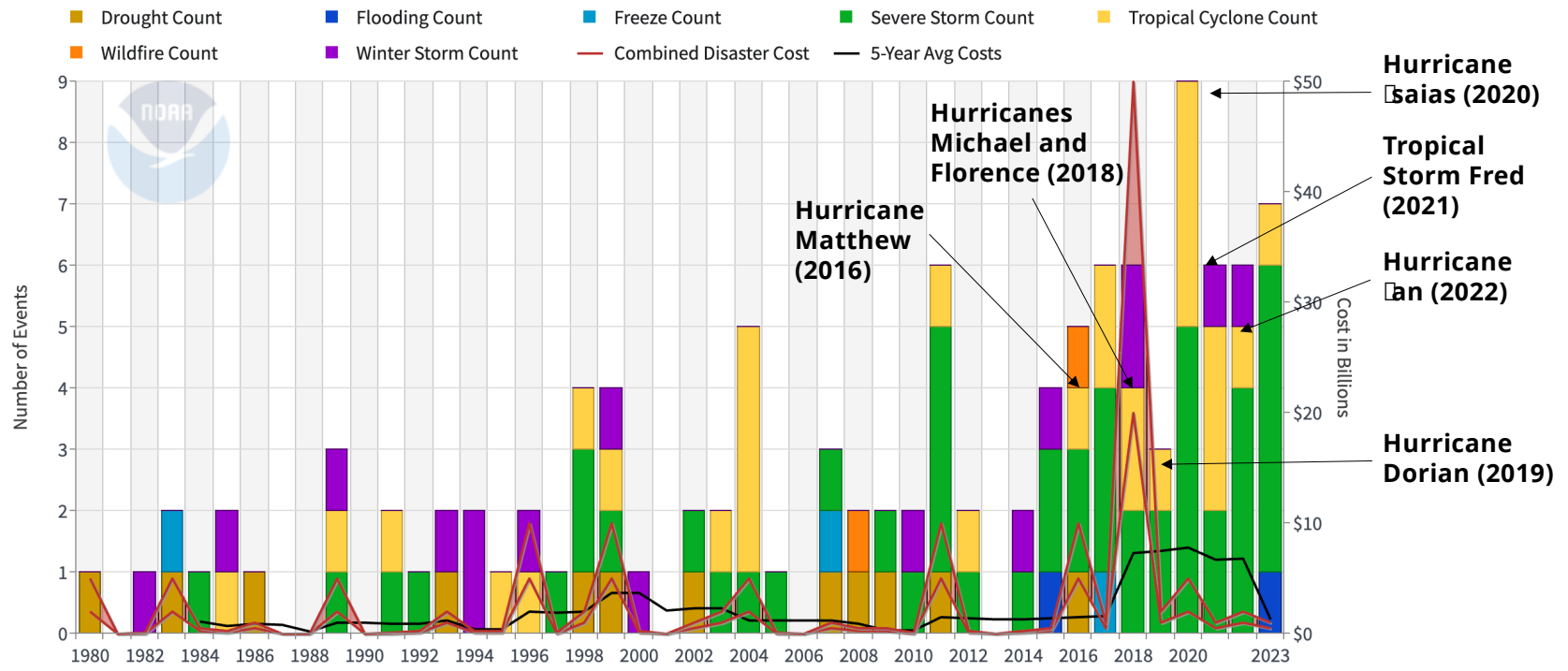
Secretary, Department of Environmental Quality



Billions-Dollar Disaster Events



North Carolina Billion-Dollar Disaster Events 1980-2023 (CPI-Adjusted)



Updated: January 9, 2024

Powered by ZingChart

Hurricane Saia (2020)

Tropical Storm Fred (2021)

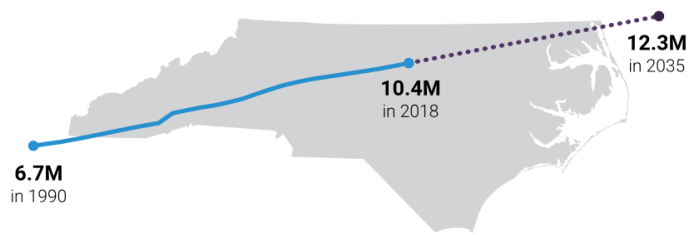
Hurricane Ian (2022)

Hurricane Dorian (2019)

Hurricane Matthew (2016)

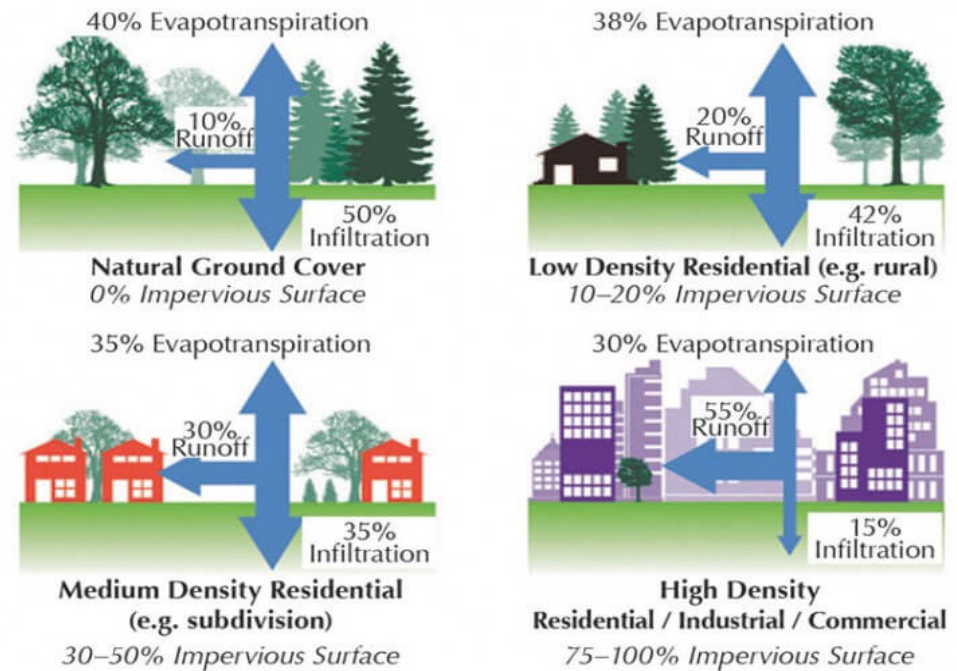
Hurricanes Michael and Florence (2018)

North Carolina population growth 1990-2035



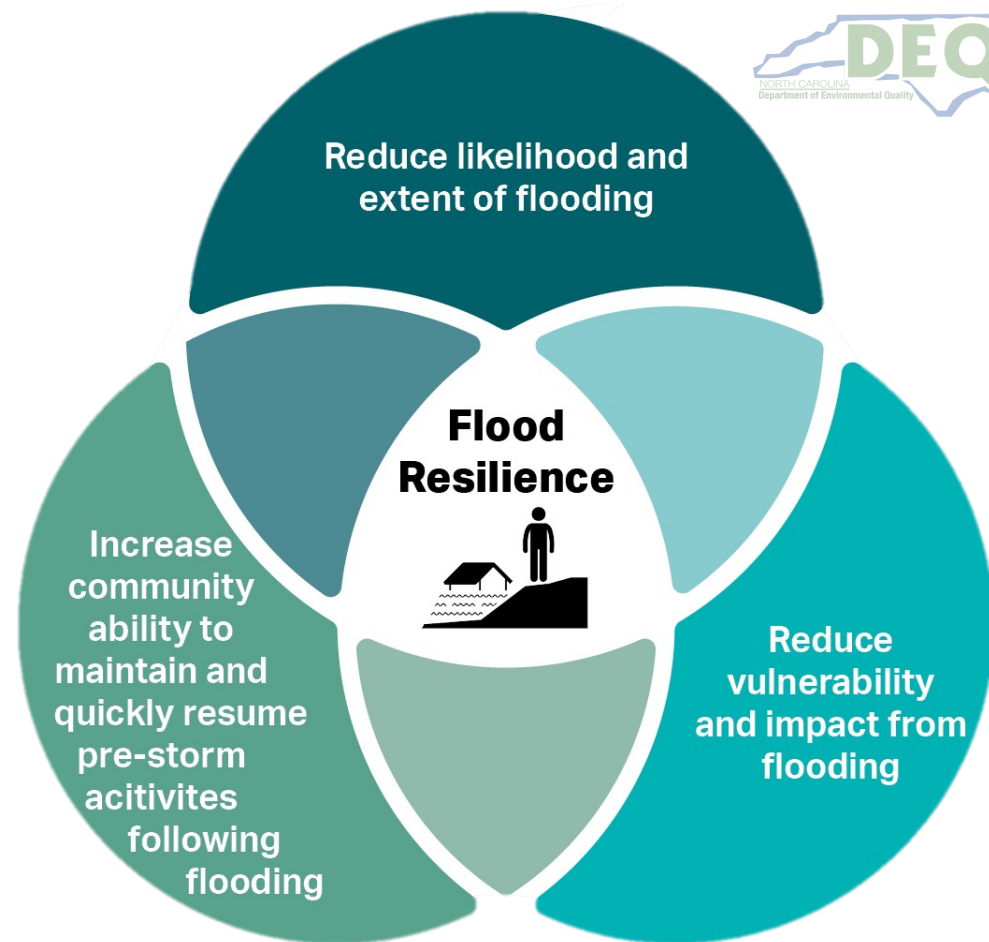
Source: US Census Bureau, NCOSBM

EFFECTS OF IMPERVIOUSNESS ON RUNOFF AND INFILTRATION



Source: The Watershed Institute

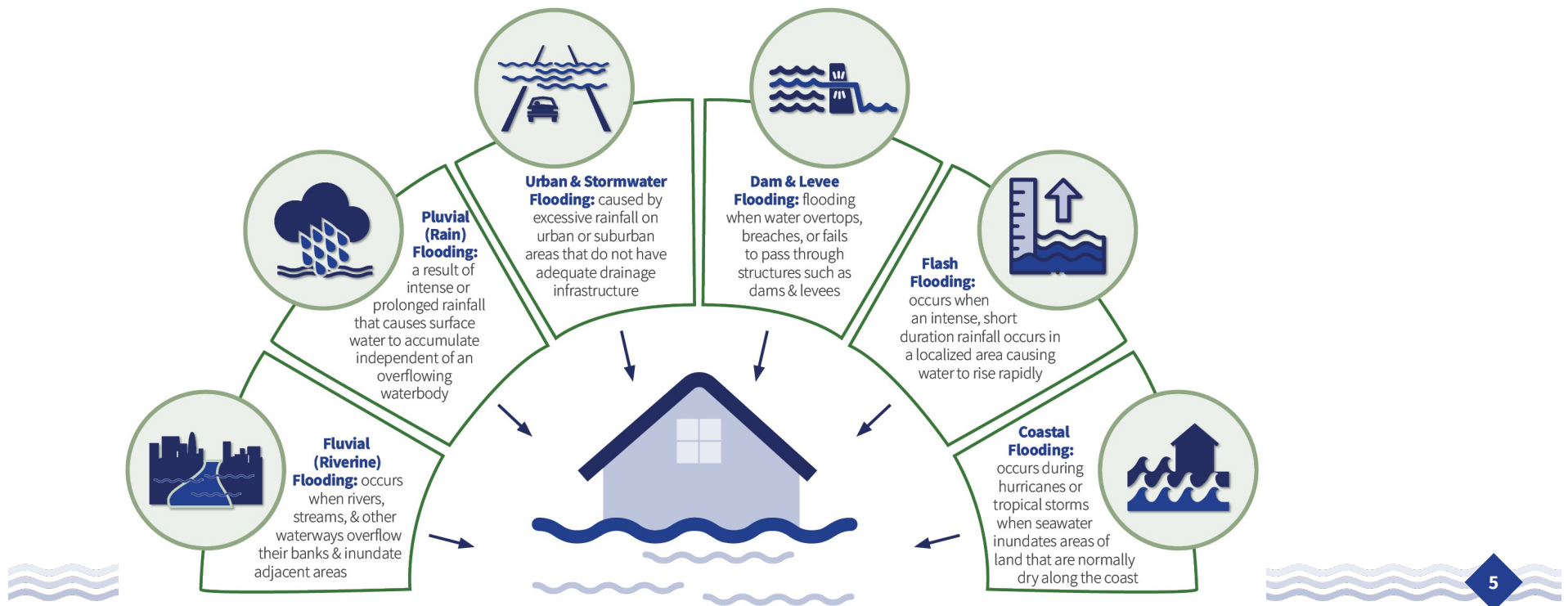
Blueprint: Core Outcomes

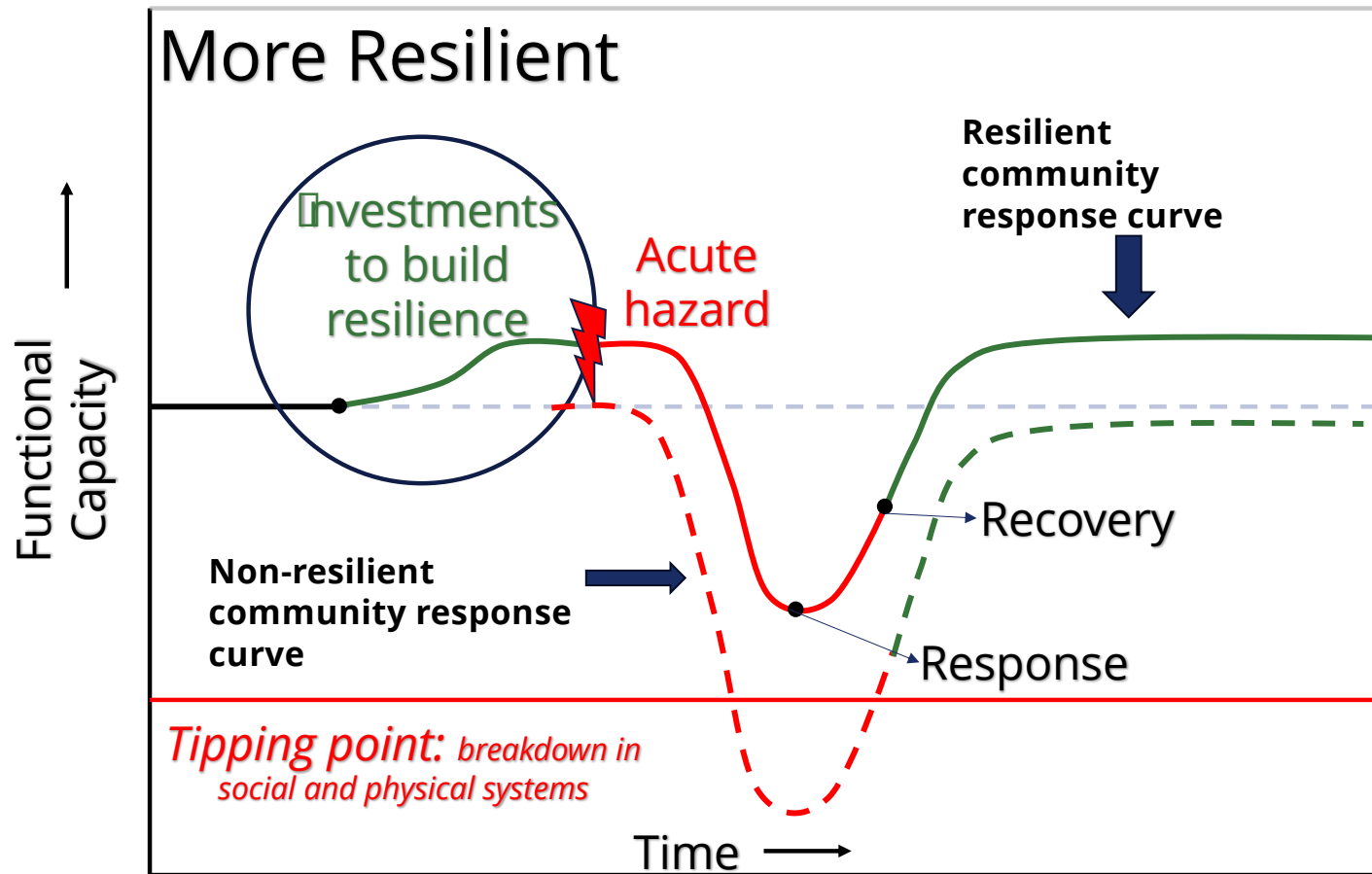


FLOOD HAZARD TYPES



There are many types and sources of flooding that create negative impacts to human safety, structures, infrastructure, and the environment. These sources of flooding may occur independently, but often occur concurrently with each other (compound flooding). Often, brick and mortar structures are a primary focus; however, impacts can include infrastructure, agricultural areas, natural resources, indirect economic impacts or anything else that could be negatively impacted by flooding. Different types of categorized flood hazards include:





- Investment in resilience leads to better outcomes before, during, and after natural disasters.

Blueprint Components



Methodology

- Develop a standardized statewide methodology for visualizing flooding and prioritizing and selecting flood mitigation strategies for future implementation.

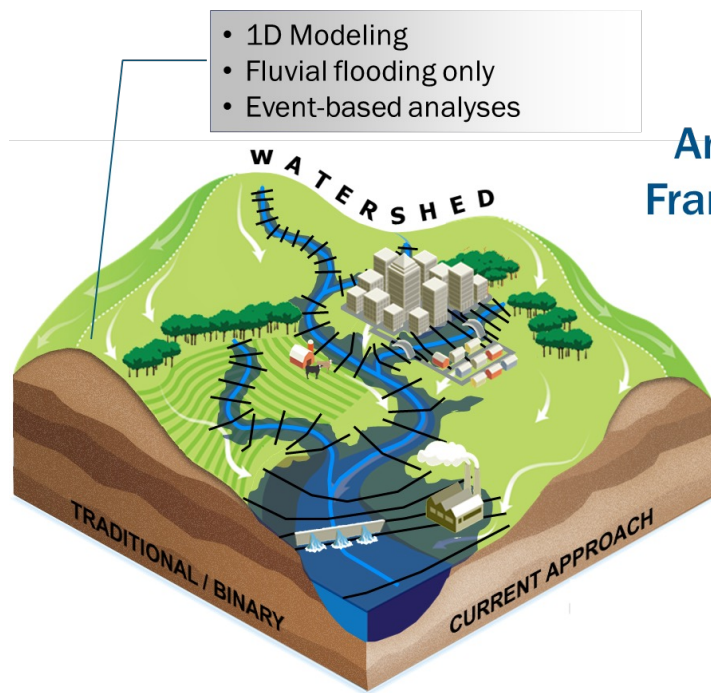
Tool

- Develop an online decision support tool which guides state, county, municipal, and others to identify and select flood mitigation strategies responsibly, systematically, equitably, and transparently.

Strategies

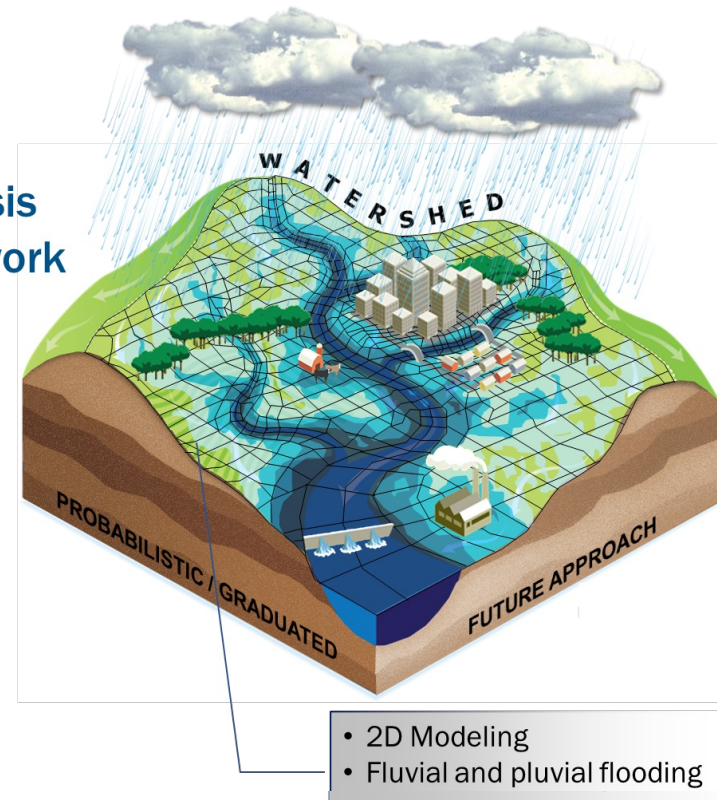
- Develop community and basin-specific action strategies and **implement on the ground projects** to address flooding for NC communities.

H&H Modeling Considerations



Inland/Riverine Flooding Examples

Analysis Framework



Allocation of Funding

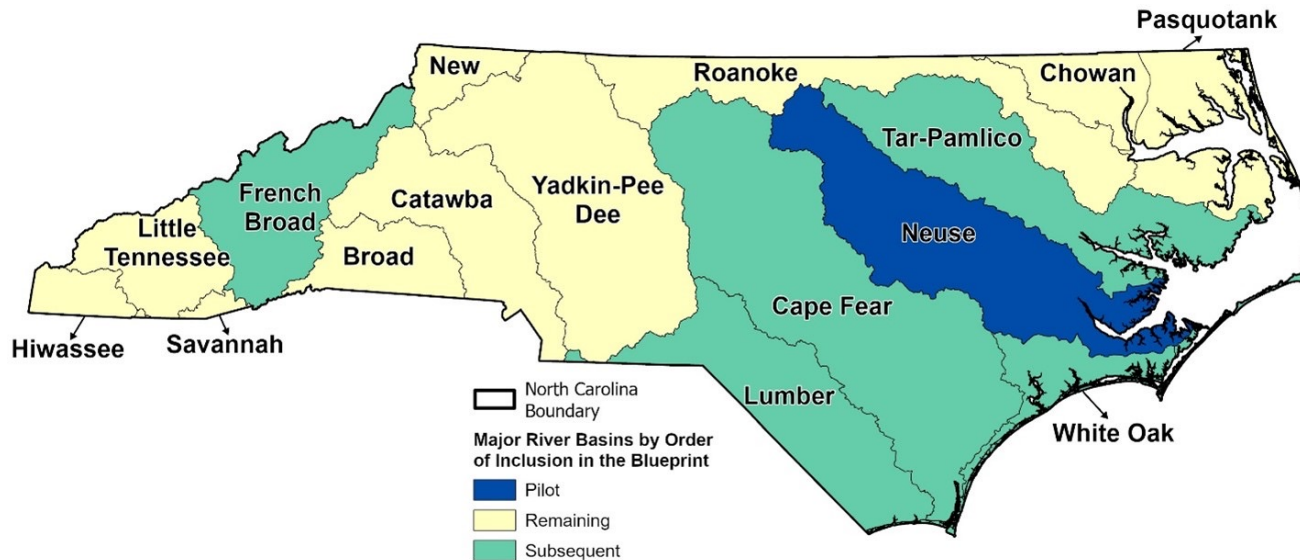


- Phase I Develop the Draft Blueprint
 - January – December 2023
- Phase II Develop the Flood Resiliency Blueprint Tool
 - November 2023 – November 2024
- Phase III Apply to Targeted Basins Statewide
 - April – December 2024

Implementation



- Implementation will occur parallel to the continued development of the tool and action strategies, beginning with prioritized projects in the Neuse.



Flood Resiliency Blueprint Tool

The screenshot displays the 'Flood Risk Management' section of the North Carolina Flood Resiliency Blueprint Tool. The interface includes a top navigation bar with 'Flood Risk Management', 'Action Management', and 'Data Repository'. A search bar is located at the top right of the map area.

Left Panel: Action Selection

- 1 Select Options to Identify Flood Risk**
 - Map Theme: Buildings
 - Flood Hazard: 100-Year Flood
- 2 Add Actions**
 - Add Existing Resiliency Action
 - Create New Resiliency Action

Center Panel: New Resiliency Action

- Mitigation Type: Structural
- Select a Mitigation Action:
 - Wet Floodproofing**: Cost \$3,248, Losses Avoided (30 Yrs) \$36,248, Cost Effectiveness 11.16
 - Relocation**: Cost \$75,040, Losses Avoided (30 Yrs) \$172,592, Cost Effectiveness 2.30
 - Utility Elevation**: Cost \$12,000, Losses Avoided (30 Yrs) \$24,500, Cost Effectiveness 2.05
 - Mitigation Reconstruction**: Cost \$133,280, Losses Avoided (30 Yrs) \$49,314, Cost Effectiveness 0.37

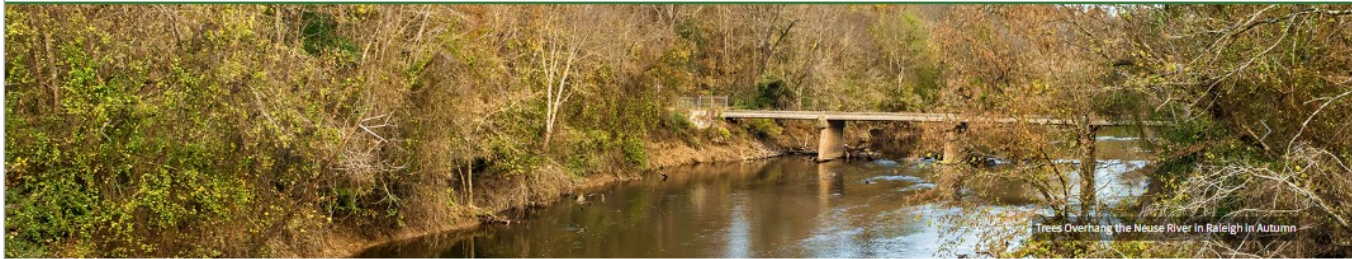
Map Area

The map shows a street grid with a blue flood zone and yellow buildings. A red dashed box highlights a specific area. A search bar at the top of the map contains 'Blount St'. A search result for 'Blount St' is shown below the search bar.

Right Panel: Impacts

- Flood Risk**: A gauge showing a risk level.
- Flood Information**: Flood Source Adkin Branch, Flood Zone Z (Minimal Flood Risk)
- Buildings**: Buildings Impacted 8
- Damages**:

Building Damages	\$35,437
Content Damages	\$34,095
Total	\$69,532



Trees Overhang the Neuse River in Raleigh in Autumn

North Carolina Flood Resiliency Blueprint

The North Carolina Department of Environmental Quality is developing the first North Carolina Flood Resiliency Blueprint. The Blueprint is a statewide watershed planning effort to establish a framework and tools to assist local communities in decision-making related to reducing flood risk and increasing resiliency.

Working with interagency partners and stakeholders, DEQ's Division of Mitigation Services plans a comprehensive approach to identify problems, address barriers, and prioritize solutions.

UPDATES



Wednesday, May 3, 2023
**Second Meeting of the
Technical Advisory Groups**



Wednesday, March 22, 2023
**NC Flood Resiliency
Blueprint Principal
Advisory Group Kickoff**

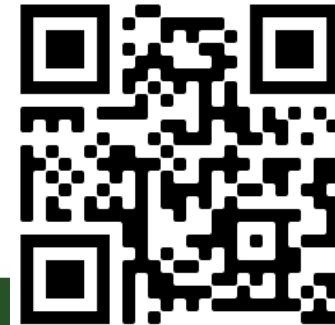


Wednesday, March 15, 2023
**NC Flood Resiliency
Blueprint Technical
Advisory Group Kickoff**

UPCOMING EVENTS

Jun	10:00 AM to 5:00 PM	Neuse Basin Advisory Group Meeting 3 ➔
30	Raleigh	
Fri		

[Show Full Calendar](#)



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North Carolina Flood Resiliency Blueprint

QUESTIONS?

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