Glossary of Terms & Definitions

North Carolina Flood Resiliency Blueprint

Prepared for the North Carolina Department of Environmental Quality by AECOM and ESP Associates

March 2024

Definitions

1.1 Summary

This document provides a comprehensive list of definitions applicable to multiple Blueprint documents. Definitions were created using trusted and vetted sources. A collaborative review effort between the NCDEQ, stakeholders, and the contractor ensured definitions met the intent and standards of Blueprint. At the beginning of each Blueprint document a section is included that references back to this set of definitions. A link to this definition glossary as well as a similar description and instructions on how to access the glossary will be included in the final, publicly available, drafts.

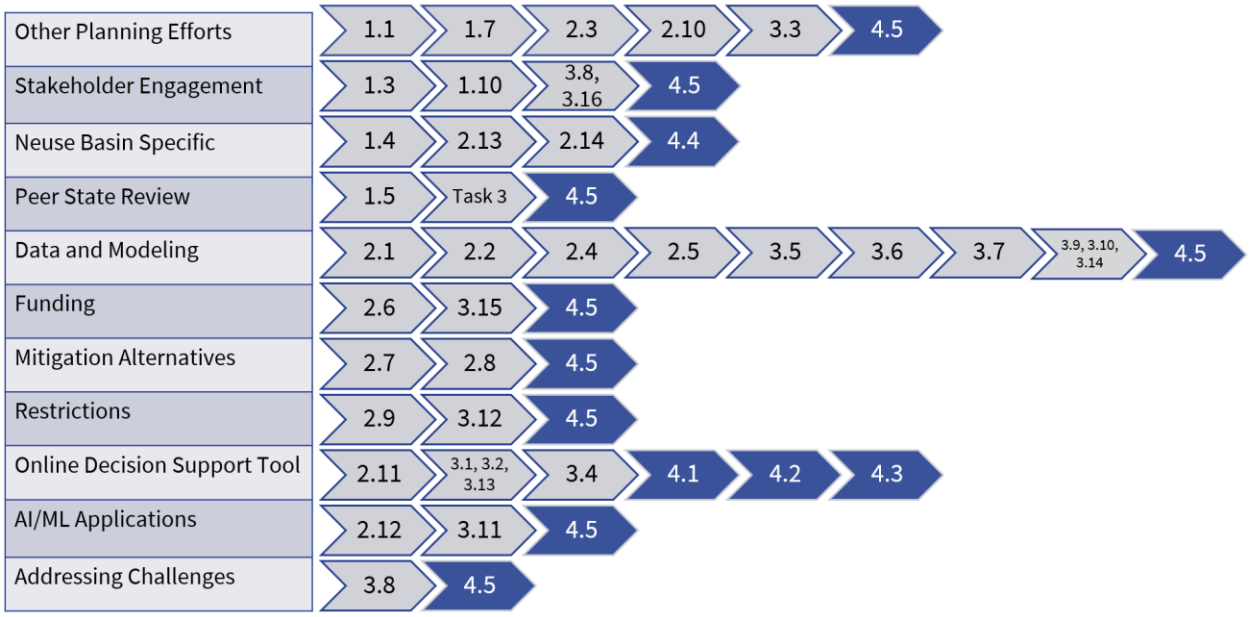

Figure 1. Related and linked Blueprint documents.

Phase 1 of Blueprint includes numerous written reports, inventories, and other forms of documentation distributed across four primary tasks: stakeholder outreach/facilitation and literature review (Task 1), gap analysis (Task 2), recommendations and decision framework (Task 3), and Draft Blueprint and Pilot Action Strategy (Task 4). Tasks were designed so that each successive effort would build on the findings from previous documents. The workflow for Phase 1 of Blueprint concludes with the release of four comprehensive documents, highlighted by the dark blue arrows in Figure 1, that connect the various pieces of Blueprint, including:

- **Subtask 4.1** - *Requirements for the development of an online decision support tool*
- **Subtask 4.2** - *Decision support tool storyboards*
- **Subtask 4.3** - *Decision support tool wireframes and mockups*
- **Subtask 4.4** - *Draft Neuse River Basin Action Strategy*
- **Subtask 4.5** - *Draft North Carolina Flood Resiliency Blueprint*

1.2 Glossary

Definitions in this section were informed by trusted and vetted sources including accepted federal and state agency definitions.

Actions: in the Blueprint, "actions" denote specific flood resilience measures identified and ranked at the basin scale. NCDEQ, in collaboration with communities, utilizes the Flood Resiliency Blueprint Tool to assess and prioritize these actions based on variety of parameters.

Adaptation: actions that prepare for and adjust to new conditions, thereby reducing harm or taking advantage of new opportunities. Adjustment in natural or human systems in response to actual or expected hazards or their effects, which reduces harm or exploits beneficial opportunities.

Agricultural Flooding: occurs when agricultural lands experience excess water due to heavy rainfall, poor drainage, or other factors. In this case, agricultural lands are not the source of, but rather the asset affected by, flooding.

Blueprint Workflow: the workflow that acts as a general guide for the development of the basin flood resiliency action strategies and application of the Flood Resiliency Blueprint Tool.

Blueprint Team: any staff member working directly with or for NCDEQ to implement the Blueprint Program.

Coastal Flooding: flood hazards along the coast that include wave action, storm surge, and tidal flooding.

Compound Flooding: a phenomenon in which two or more flooding sources occur simultaneously or subsequently within a short period of time. The most common type of compound flooding—a combination of storm surge and riverine flooding in coastal areas—can produce floodwaters that are longer in duration and more widespread than anticipated.

Community: for the purposes of this document, community is not only a unified body of individuals, such as a group with common interest living in a particular area, but also includes local governments (villages, towns, cities, tribal areas, and counties).

Dam and Levee Flooding: occurs when a dam or levee fails to contain floodwater. The failure can result from floodwater overtopping the dam or levee as well as if the dam or levee experiences a structural failure, or breach, resulting in a release of floodwater.

Draft Blueprint: a programmatic and procedural document providing the framework to advance and implement the North Carolina Flood Resiliency Blueprint program.

Equity: the consistent and systematic fair, just, and impartial treatment of all individuals, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.

Exposure: the predisposition of an environmental, physical, social, and/or economic system to be disrupted by a flooding hazard due to its location in the same area of influence.

Flash Flooding: characterized by a rapid rise in water, high velocities, and a large amount of debris. Rainfall intensity and duration, as well as the steepness of watershed and stream gradients, are major

factors in flash flooding. The differentiator in this type of flooding is the speed of onset as opposed to origin of flood water.

Flood Hazard: an event or physical condition that can cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, damage to the environment, interruption of business, or other types of harm or loss.

Flood Impact: measurable damage resulting from a hazardous flooding event on people, socioeconomic systems, environmental, structural, commercial and infrastructure assets.

Flood Resilience: the capacity of individuals, a community, business, or natural environment to reduce, withstand, respond to, and recover from flooding by positively mitigating the impacts of changing conditions and challenges including climate change, increasing rain fall, and sea level rise, and adapting to those conditions.

Flood Resiliency Action Profiles: a set of actions, developed by communities in collaboration with NCDEQ and its partners, informed by analyses of the relevant flood hazards, projected impact, and the defined action or resiliency/mitigation project for that specific hazard risk to the community. The Action Profile will further include benefit, cost estimates, feasibility, and complexity for completing the action. The Action Profiles will also include regional mitigation actions.

Flood Resiliency Blueprint Tool: the "Blueprint Tool" is an online decision-support tool that supports the development and implementation of River Basin Flood Resiliency Action Strategies. It will allow end users (e.g., state agencies, regional entities, communities, and local governments) to assess current and future flood risk and vulnerability based on the best available data and models, identify and prioritize flood resiliency solutions, provide guidance on funding options, and track implementation.

Flood Risk: combination of the likelihood of a flood hazard, the physical exposure of people and assets to that flood hazard, and the vulnerability of people and assets to suffer loss and damage during and after a flooding event.

Flood Vulnerability: the extent to which environmental, physical, social, and economic systems are susceptible to floods due to exposure, in conjunction with its ability (or inability) to reduce, withstand, respond to, and recover from a flood hazard.

Green Infrastructure: the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspiration stormwater and reduce flows to sewer systems or to surface waters.

Grey Infrastructure: traditional stormwater infrastructure in the built environment such as gutters, drains, pipes, and traditional retention basins.

Groundwater Flooding: occurs when the water table in an area rises above the ground surface.

Hydraulics: branch of science concerned with the practical applications of fluids, primarily liquids, in motion.

Hydrology: the science that encompasses the occurrence, distribution, movement, and properties of the waters of the earth and their relationship with the environment within each phase of the hydrologic cycle.

Historically Marginalized: individuals, groups, and communities that have historically and systematically been denied access to services, resources, and power relationships across economic,

political, and cultural dimensions as a result of systemic, durable, and persistent racism, discrimination, and other forms of oppression.

Mining Flooding: occurs when water accumulates in mining operations such as open pits, underground mines, and tailings dams. This can occur due to a range of factors, including heavy rainfall, equipment failures, and human error. As with agricultural flooding, mine facilities are the assets affected. Additionally, mines can be the source of flooding in instances where tailings dams experience a breach or overtop or when a mine blowout occurs.

Mitigation: any effort that reduces the overall risk and severity of flood-related loss and damage to life and property.

Mitigation (Compensatory): offsetting unavoidable impacts to wetlands, streams, and other aquatic resources via restoration, establishment, enhancement, and/or preservation.

National Flood Insurance Program (NFIP): the program of flood insurance coverage and floodplain management administered under the National Flood Insurance Act and applicable Federal regulations promulgated in Title 44 of the Code of Federal Regulations, Subchapter B.

Natural Infrastructure Flood Mitigation Program (NIFMP): authorized by the North Carolina General Assembly in 2020, the program within DMS that seeks to incorporate flood storage capacity enhancement and nature-based solution projects into the division's activities.

Nature-Based Solutions (NBS): sustainable planning, design, environmental management, and engineering practices that weave natural features or processes into the built environment to promote adaptation and resilience and provide multi-benefit solutions. These solutions use natural features and processes to combat climate change, reduce flood risk, improve water quality, protect coastal property, restore and protect wetlands, stabilize shorelines, etc.

Non-Structural Mitigation: practices that reduce flood losses by removing people and property out of risk areas. Non-structural mitigation techniques include elevated structures, property buyouts, permanent relocation, zoning, subdivision, building codes, and stormwater detention requirements.

North Carolina Flood Resiliency Blueprint (Blueprint): the North Carolina Flood Resiliency Blueprint is a statewide initiative designed to bring together and build upon all relevant existing resources and knowledge in the state to create one unified effort to increase community resiliency to flooding. The Blueprint includes a statewide flood planning framework and decision-support tool that enables state, tribal, regional, and local entities and their stakeholders to identify, prioritize, and direct resources to implement effective flood resiliency strategies based on the best available science and understanding of likely future conditions. The Blueprint will serve as the backbone of North Carolina's flood planning process through the development and implementation river basin specific flood resiliency strategies. The report herein serves as the programmatic and procedural document providing the framework to advance and implement the North Carolina Flood Resiliency Blueprint initiative.

Overland Ponding: occurs when water accumulates on low-lying areas, resulting in the formation of ponds or standing water. This can happen during heavy rainfall events, when drainage systems are overwhelmed and water cannot be carried away quickly enough, or when there are obstructions or barriers that prevent water from flowing away from an area.

Parish: a territorial division corresponding to a county in other states.

Pluvial Flooding: a pluvial flood occurs when a significant rainfall event creates a flood independent of an overflowing water body such as a river. Pluvial flooding can happen in any location, urban or rural, and even in areas with no nearby bodies of water.

Principal Advisory Group: a committee of subject matter experts comprised of representatives from various sectors that provide advisory input and feedback on the Blueprint regarding the policy, process, engagement, modeling, tools, and support used for the implementation of the decision-support tool.

Repetitive Loss: an NFIP-insured building that has incurred flood-related damages on two occasions during a 10-year period ending on the date of the event for which the insured makes a second claim. The cost of repairing the flood damage, on average, must equal or exceed 25 percent of the market value of the building at the time of each flood. The insurer must verify that the NFIP paid a claim for both qualifying losses and that the state or community is enforcing a cumulative substantial damage or repetitive loss provision in its law or ordinance and declared the building substantially damaged on that basis.

Resilience: capacity of individuals, a community, business, or natural environment to reduce, withstand, respond to, and recover from flooding by positively adapting and mitigating the impacts of changing conditions and challenges, including flooding and climate change.

River Basin: the largest category of surface water drainage (i.e., an area of the landscape that is drained by a river and its tributaries); there are 17 river basins in North Carolina.

River Basin Advisory Group: a committee of subject matter experts and representatives from various sectors that provide advisory input and feedback on development of a River Basin Action Strategies.

River Basin Flood Resiliency Action Strategy: a “River Basin Action Strategy” is a strategic plan specific to an individual river basin developed with the assistance of the Flood Resiliency Blueprint Tool and informed by community and stakeholder input. This strategy outlines specific actions for flood resilience, which are accompanied by potential funding strategies.

Riverine (Fluvial) Flooding: fluvial, or riverine, flooding occurs when excessive rainfall over an extended period causes a river to exceed its channel capacity.

Stakeholders: people who contribute to the planning and decision-making processes of ongoing resilience efforts in communities where they live, work, play, and invest.

State Agency: any of the more than 400 sub-units within the executive branch of the State, including its departments, institutions, boards, commissions, universities, and units of the State.

State Departments: Department of Administration, Department of Agriculture and Consumer Services, Department of Commerce, Department of Natural and Cultural Resources, Department of Environmental Quality, Department of Health and Human Services, Department of Information Technology, Department of Insurance, Department of Justice, Department of Labor, Department of Military and Veteran Affairs, Department of Public Instruction, Department of Public Safety, Department of Revenue, Department of State Treasurer, Office of the Secretary of the State, Department of Transportation, Wildlife Resources Commission, Office of State Budget and Management, Office of the Governor, Office of the Lieutenant Governor, Office of The State Auditor, Office of the State Controller.

Severe Repetitive Loss: an NFIP-insured building…

- That has incurred flood-related damage for which four or more separate claims payments have been made, with the amount of each claim (including building and contents payments) exceeding $5,000, and with the cumulative amount of such claim's payments exceeding $20,000; or
- For which at least two separate claims payments (building payments only) have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the building.

In both instances, at least two of the claims must be within 10 years of each other, and claims made within 10 days of each other will be counted as one claim. In determining Severe Repetitive Loss status, FEMA considers the loss history since 1978, or from the building's construction if it was built after 1978, regardless of any changes in the ownership of the building.

Structural Mitigation: practices that reduce flood losses by reconstructing landscapes. Structural mitigation techniques include floodwalls/seawalls, floodgates, levees, evacuation routes, and stormwater control measures.

Susceptibility: the elements exposed within an environmental, physical, social, and/or economic system that influence the probabilities of being harmed at times of hazardous floods.

Technical Advisory Group (TAG): the Blueprint TAGs is comprised of experts in their respective fields that have specific knowledge and experience in the flood resiliency space. TAGs provide feedback, input, expert opinion, and support to the Blueprint team. Seven TAGs contribute to the development of the Blueprint, each with a specific focus on either government, environmental, social, or Neuse River Basin-specific aspects. TAGS include Governance, Partnership/Funding, Hazard Identification, Vulnerability/Risk/Impact, Resilience/Mitigation/Reduction, Tool Development/Acceptance, and the Neuse Regional Advisory Group.

Underserved: populations sharing a particular characteristic, as well as geographic communities, who have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life.

Under-resourced: populations sharing a particular characteristic, as well as geographic communities, who have insufficient resources (often due to being underserved) to respond to and recover from external stresses.

Urban and Stormwater Flooding: occurs when excess rainfall in an urban area is greater than can be conveyed away from the developed area by the urban drainage system.

Vulnerable: (refers to socially vulnerable) populations sharing a particular characteristic, as well as geographic communities, which are more susceptible to adverse impacts of external stresses due to characteristics that impact their resiliency.

Watershed: an area of land that contains a common set of waterbodies (streams, rivers, lakes, or wetlands) that all drain into a single larger body of water. Watersheds can be defined at multiple geographic scales. In North Carolina, 17 "major" watersheds (basins) are defined by statute.

Workshop: a meeting at which a group of people engage in intensive discussion and activity on a particular subject or project. Workshops are designed to engage participants and foster their active involvement in the process.