

# NC Flood Resiliency Blueprint

Tool Requirements/mockups/storyboards  
and Preliminary Draft Neuse Action Strategy Review



December 19<sup>th</sup>, 2023



# Background



# Agenda

- Welcome- Shrikar Nunna
- Logistics and meeting purpose- Facilitator - Patrick Beggs
- Tool Recommendations review- Dave Canaan/ Judie Taylor
  - Questions - Patrick Beggs
- Preliminary Draft Neuse Action Strategy
  - DEQ - Introduction
  - Presentation - Nathan Slaughter
    - Questions- Patrick Beggs
- Day Logistics for Rooms, Lunch, and afternoon layout - Patrick Beggs



# Flood Resiliency Blueprint Tool Requirements, Storyboards, Wireframes, and Mockups

North Carolina Flood Resiliency Blueprint

December 19, 2023



## Requirements

---

Purpose of web application requirements:

- **Outline** the functionalities, features, and specification that the application must meet.
- Articulate the client's needs, goals, and user **expectations**.
- Provide a **foundation** for the design and development process.
- **Guide** the project team, align stakeholder expectations.
- Serve as a **reference point** for assessing the project's success.

## Storyboards

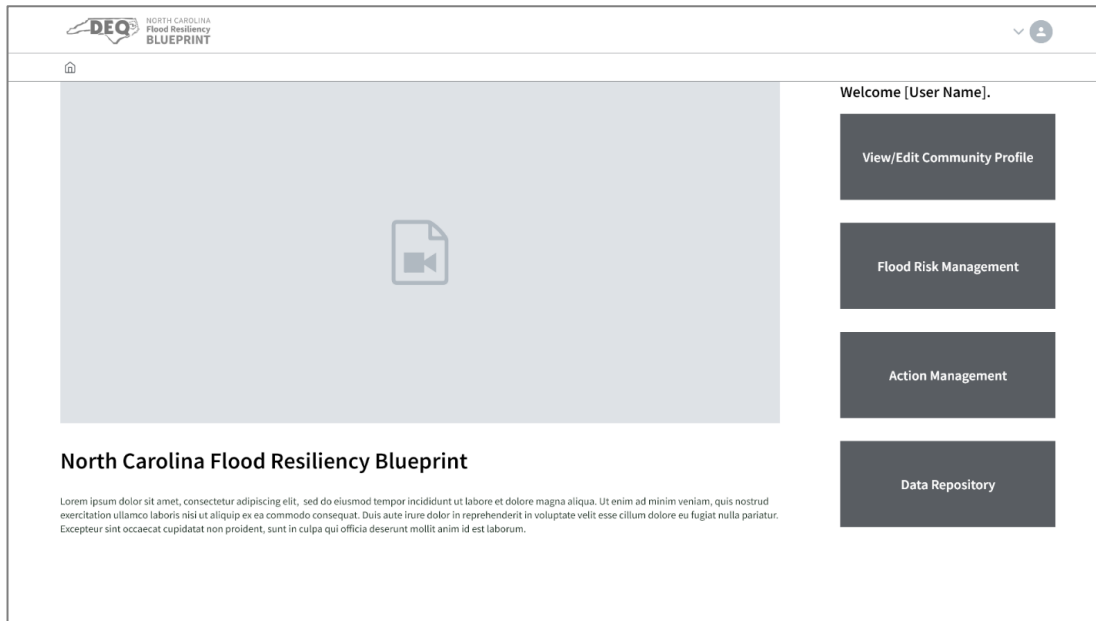
---

- Website **storyboards** serve as visual renderings.
- Outline the structure and flow of a website.
- Depict the arrangement of elements on each page.
- Illustrate the user journey and interactions.
- Each page in the storyboard includes:
  - A **wireframe** or a **mockup** of an application screen.
  - A listing of user roles that would interact with that screen and how that user would interact.
- Each storyboard page is presented in the order that users would interact.

*\*All content and functionality will be subject to further refinement as part of Phase II*

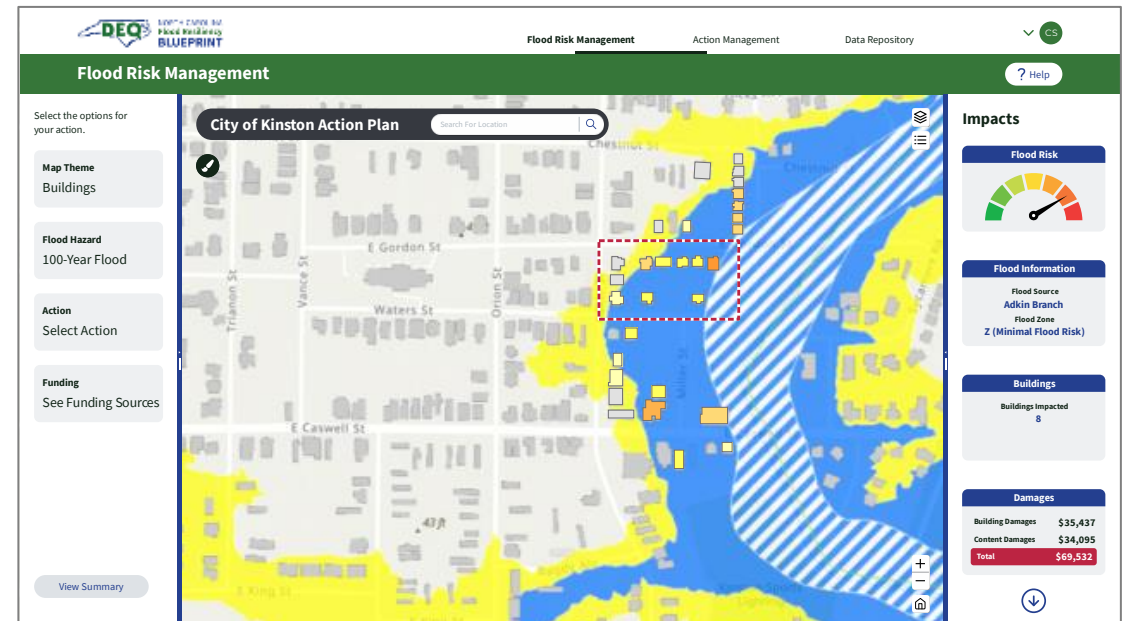
# Wireframes and Mockups

## Wireframes



- Skeletal, low-fidelity representation of layout and structure.
- Outlines the basic design elements and placement

## Mockups



- High-fidelity representation of a design.
- Provides a more realistic preview of how the final website will look.

*\*All content and functionality will be subject to further refinement as part of Phase II*

## Hybrid Agile Workflow

---

Shortens design, analysis and planning, but lets you define project frames including budget and time of delivery.

### **Managing projects in Agile workflow emphasizes:**

- Flexibility
- Collaboration
- Continuous Improvement/Continuous Delivery



# Application Modules

---

## 1. Introductory Module

- a) Login & Homepage
- b) Community Flood Risk
- c) Community Profile

## 2. Flood Risk Management Module

## 3. Resiliency Action Evaluation Module

## 4. Action Management Module

## 5. Data Repository

*\*All content and functionality will be subject to further refinement as part of Phase II*



Flood Resiliency Blueprint Tool

# Introductory Module

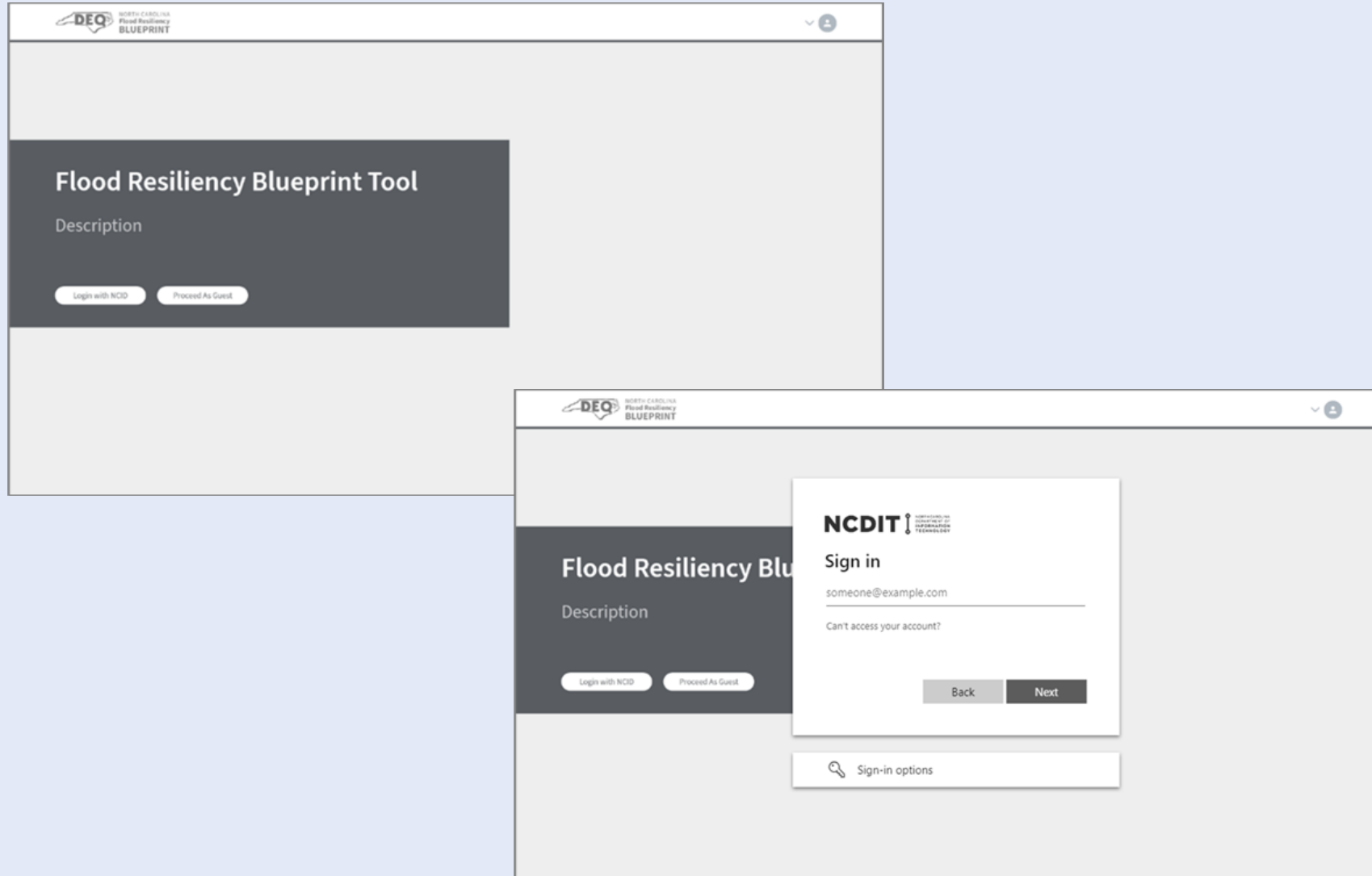


INTRODUCTORY MODULE

# Login & Homepage



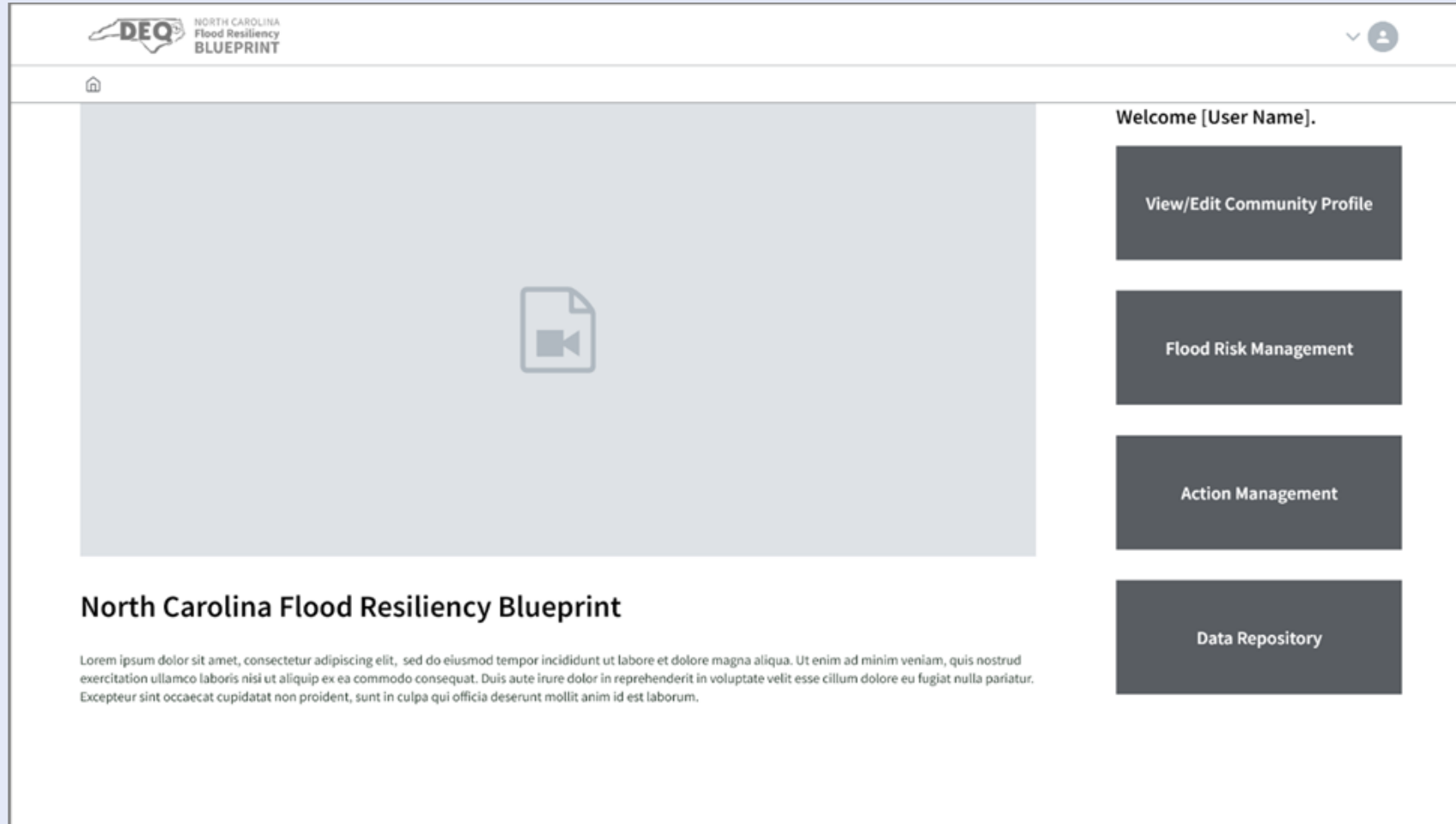
# Login Screen



- Credentialed users click **Login with NCID** button, and the NCID login appears.
- General Public clicks **Proceed as Guest** to enter site.

*\*All content and functionality will be subject to further refinement as part of Phase II*

# Homepage



- Users land on a home page upon login.
- Contents determined by user role.
- Buttons link users to functionality they have access to.

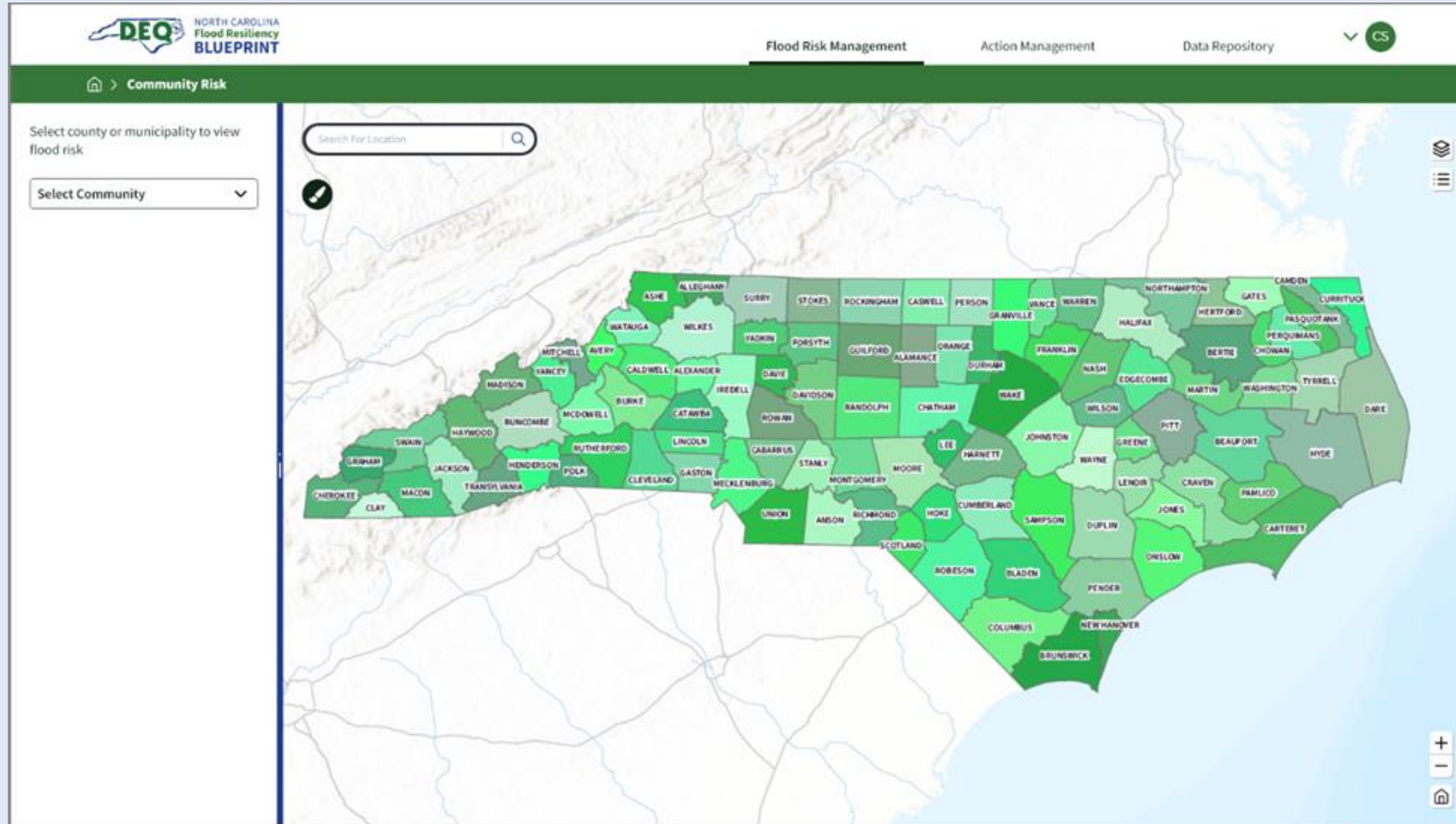
*\*All content and functionality will be subject to further refinement as part of Phase II*

INTRODUCTORY MODULE

# Community Flood Risk



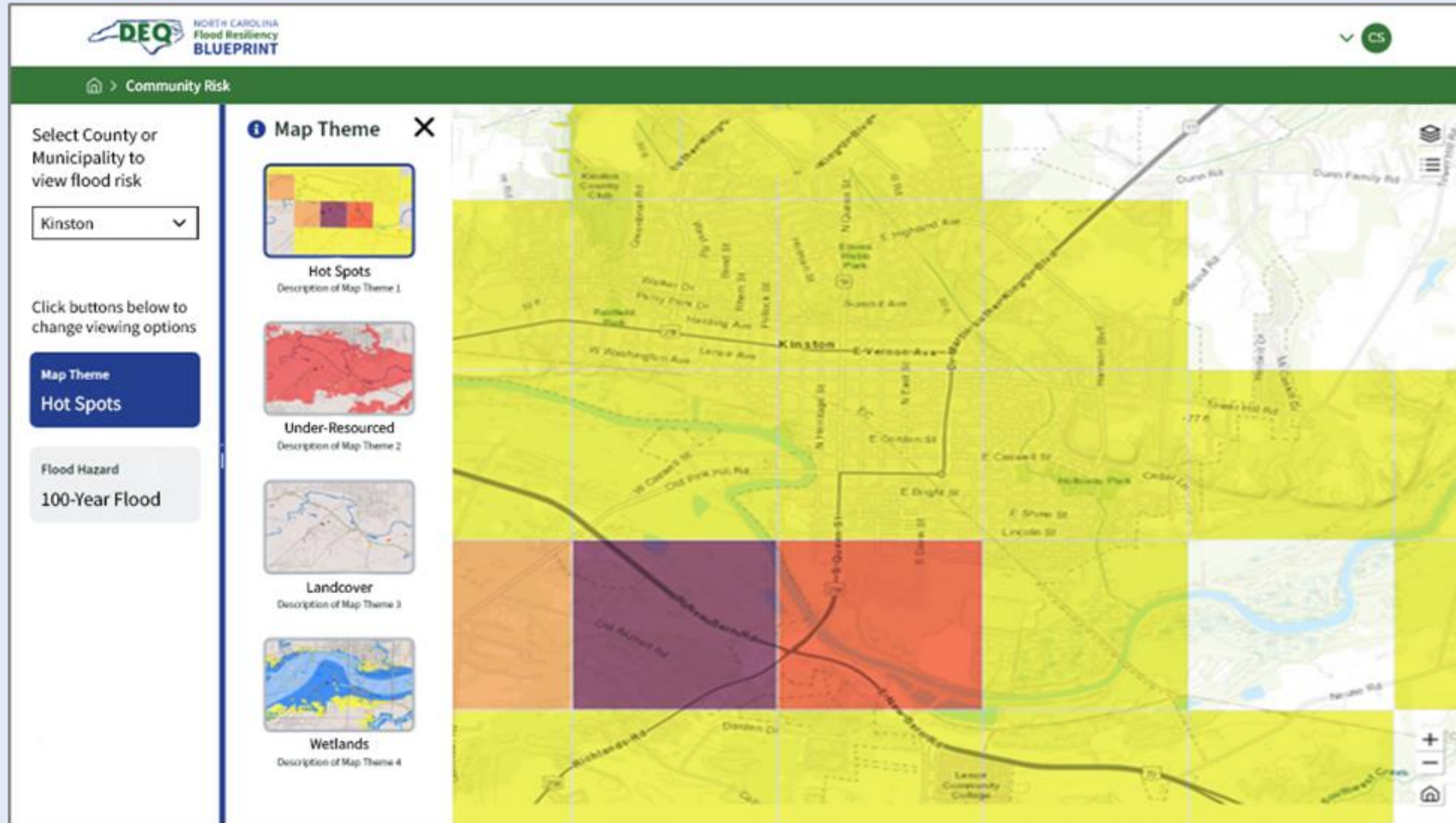
# Community Flood Risk



- Helps community or community member better understand their flood risk.
- All users can view Community Flood Risk.
- User selects a county or municipality.

*\*All content and functionality will be subject to further refinement as part of Phase II*

# Community Flood Risk



- Map zooms to selected area.
- Default Map Theme and Flood Hazard load.

*A Map Theme is a curated set of layers that help users identify risk a specific topic*

- Map Themes and Flood Hazards can be changed by clicking the button.

*\*All content and functionality will be subject to further refinement*

*as part of Phase II*



INTRODUCTORY MODULE

# Community Profile



# Community Profile: Demographics

**Population & Demographics: City of Kinston**

Describe The General Make Up And Recent Changes In The Planning Area Population.

Add your description

2020 POPULATION  
**19,900**

Describe the general composition of the planning area demographics.

Add your description

Race

Age and Gender

Housing

Income

Education

HISPANIC	2.0%
ASIAN	0.8%
AMERICAN INDIAN	0.1%
TWO OR MORE RACES	4.7%
OTHER	4.7%

Cancel Save and Exit Next

- Community demographics auto-populate from existing data.
- Communities review, edit, and add key information about their community.

*\*All content and functionality will be subject to further refinement as part of Phase II*

# Community Profile: Capacity & Capabilities

The screenshot displays the 'Capacity & Capabilities: City of Kinston' interface. The left sidebar contains navigation options: Population & Demographics, Critical Facilities & Infrastructure, Other Facilities & Infrastructure, Land Use & Key Industries, Capacity & Capabilities (highlighted), and Community Profile Summary. The top navigation bar includes 'Flood Risk Management', 'Action Management', and 'Data Repository'. The main content area features a form with tabs for 'Planning & Regulatory', 'Administrative & Technical', 'Fiscal', and 'Education & Outreach'. The 'Planning & Regulatory' tab is active, showing a list of 16 items with checkboxes and dropdown menus for their status. A map of Kinston, NC, is visible on the right side of the interface.

Item	Status
<input checked="" type="checkbox"/> Hazard Mitigation Plan	Yes
<input checked="" type="checkbox"/> Comprehensive Land Use Plan	Yes
<input type="checkbox"/> Floodplain Management Plan	Yes
<input type="checkbox"/> Open Space Management Plan	Yes
<input checked="" type="checkbox"/> Stormwater Management Plan	Yes
<input checked="" type="checkbox"/> Emergency Operations Plan	Under Development
<input type="checkbox"/> SARA Title III Plan	Yes
<input type="checkbox"/> Radiological Emergency Plan	Yes
<input type="checkbox"/> Continuity of Operations Plan	Yes
<input checked="" type="checkbox"/> Evacuation Plan	Yes
<input type="checkbox"/> Disaster Recovery Plan	Yes
<input type="checkbox"/> Capital Improvements Plan	Yes
<input type="checkbox"/> Economic Development Plan	Yes
<input type="checkbox"/> Historic Preservation Plan	Yes
<input type="checkbox"/> Transportation Plan	Yes
<input type="checkbox"/> Flood Damage Prevention Ordinance	Yes

- Communities enter Capacity and Capabilities details.
- Used to help identify under-resourced communities, as well as other purposes.

*\*All content and functionality will be subject to further refinement as part of Phase II*



Flood Resiliency Blueprint Tool

# Flood Risk Management Module



FLOOD RISK MANAGEMENT MODULE

# Create Draft Action Plan



# Create Draft Action Plan

**DEQ** NORTH CAROLINA  
Flood Resiliency  
BLUEPRINT

Flood Risk Management | Action Management | Data Repository

Flood Risk Management

Adjust Map Theme and Flood Hazard to Identify Your Flood Risk

Map Theme  
Map Theme 1

Flood Hazard  
100-Year Flood

**Create Draft Action Plan**

Draft Action Plan Name\*  
City of Kinston Community Action Plan

Action Plan Description\*  
Add description

Which river basin is participating in this Action Plan? Select all that apply.  
Neuse

Which county is participating in this Action Plan? Select all that apply.  
Select a county

Which jurisdiction(s) is participating in this Action Plan? Select all that apply.  
Kinston

Cancel Next

- Communities enter the plan details for a new Draft Action Plan including:

- Draft Plan Name
- Description
- Basin, County, and Jurisdiction(s)

*\*All content and functionality will be subject to further refinement*

*as part of Phase II*

## Create Draft Action Plan: Goals and Priorities

The screenshot shows a web interface for creating a draft action plan. The page is titled 'Goals and Priorities' and is part of the 'Draft Action Plan Goals and Priorities' section. The interface includes a sidebar on the left with options for 'Map Theme' (Map Theme 1) and 'Flood Hazard' (100-Year Flood). The main content area has a 'Draft Action Plan Goals and Priorities' section with a text input field for 'Add your goal' and a dropdown menu for 'Add and rank your action plan's top priorities'. Below the dropdown is a list of priority categories: 'Socially Vulnerable Populations', 'Return on Investment', 'Low Risk Projects', 'Nature-Based Solutions', and 'Priority'. At the bottom of the form are 'Cancel' and 'Create' buttons. To the right of the form is a map of North Carolina counties, and below it is a bar chart titled 'Aggregated Capacity/Capability Score' showing scores for six topics.

- Submitters enter detailed goals for their plan.
- Submitters add and rank their plan priorities.

*\*All content and functionality will be subject to further refinement as part of Phase II*

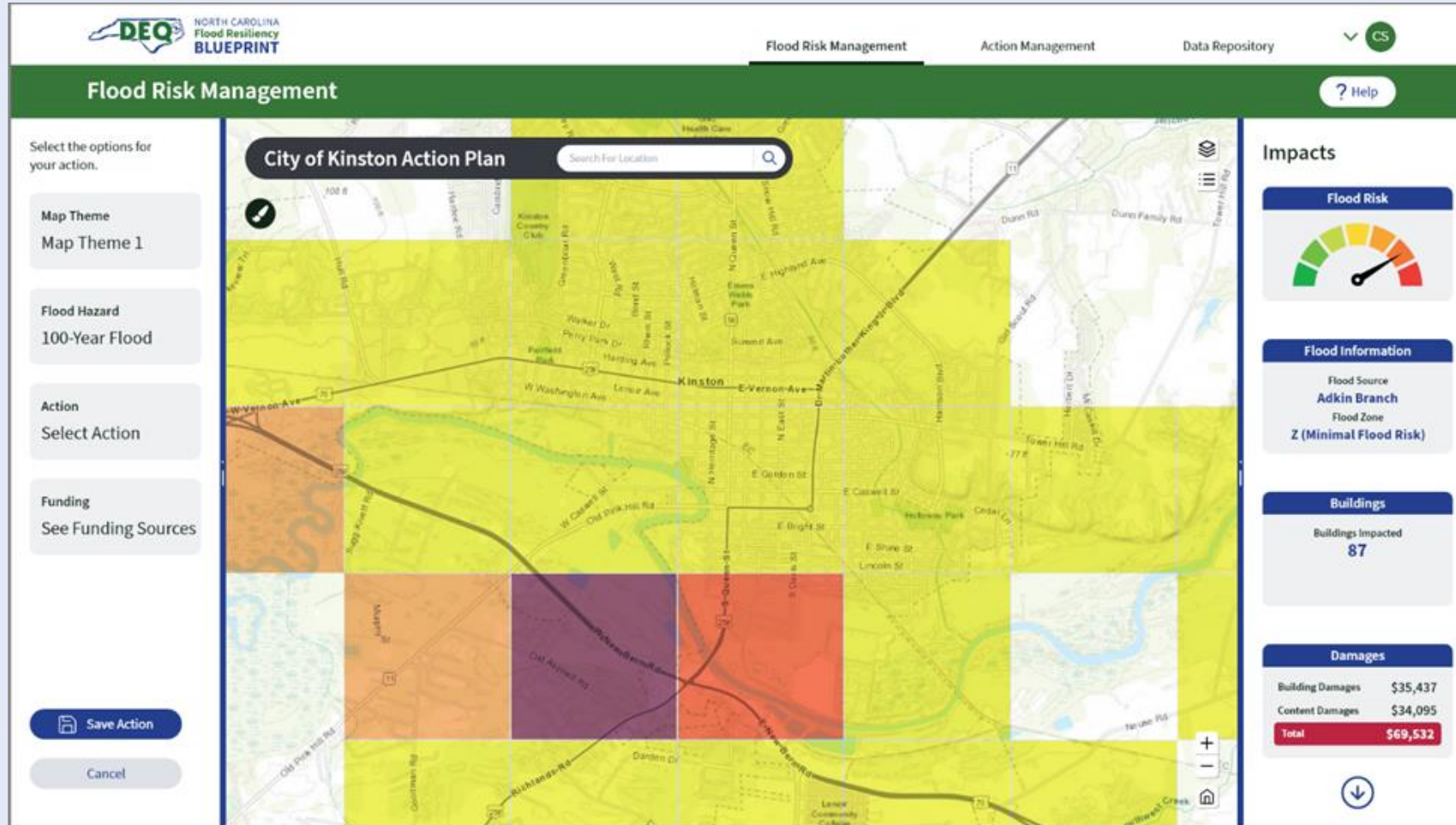
FLOOD RISK MANAGEMENT MODULE

# Identify Flood Risk Areas





# Identify Flood Risk Areas



- Submitters identify flood risk areas by viewing various Map Themes and Flood Hazards, and assessing Impacts.
- Impacts are shown on the right.
- Map Themes and Flood Hazards can be changed by clicking the button.

*\*All content and functionality will be subject to further refinement*

*as part of Phase II*

FLOOD RISK MANAGEMENT MODULE

# View Impacts



# View Impacts

The screenshot displays the 'Flood Risk Management' interface for the 'City of Kinston Action Plan'. The main map shows a residential area with a yellow flood hazard zone and a blue water body. A 'Damages' popup window is open, showing a table of damage estimates. The 'Impacts' dashboard on the right provides a summary of the selected area's impact, including a gauge for Flood Risk, Flood Information (Adkin Branch, Flood Zone Z), Buildings Impacted (8), and a total damage estimate of \$69,532.

	Buildings Affected	Estimated Building Damages	Losses Avoided
Residential	10	\$35,437	\$10,000
Commercial	0	\$0	\$0
Public Facilities	0	\$0	\$0
Community Facilities	0	\$0	\$0
<b>TOTAL</b>	<b>10</b>	<b>\$35,437</b>	<b>\$#</b>
Critical Facilities	5	\$20,437	\$#

- Impacts are shown in the dashboard on right.
- Impacts shown vary based on selections.
- Each pane can be clicked to show detailed impact and analysis in a window.

*\*All content and functionality will be subject to further refinement*

*as part of Phase II*

FLOOD RISK MANAGEMENT MODULE

# Add Existing Resiliency Actions



# Add Existing Resiliency Actions

The screenshot displays the 'Flood Risk Management' interface. On the left, a sidebar contains options for 'Map Theme' (Map Theme 1), 'Flood Hazard' (100-Year Flood), 'Action' (Select Action), and 'Funding' (See Funding Sources). A 'Save Action' button is at the bottom of the sidebar. The main area is titled 'Action' and includes a search bar, radio buttons for 'Existing' (selected) and 'New', and a list of 12 placeholder entries for 'Existing Action Name' and 'Agency Name'. A map in the center shows a flood zone with five numbered green markers (1-5) overlaid on an orange boundary. The right-hand panel, titled 'Impacts', shows a 'Flood Risk' gauge, 'Flood Information' (Adkin Branch, Flood Zone Z), 'Buildings Impacted' (87), and 'Damages' (Building: \$35,437; Content: \$34,095; Total: \$69,532).

- Submitters can view existing action details in a window.
- Submitters select existing actions to add to their plan.
- Impacts shown are based on the selected action.

*\*All content and functionality will be subject to further refinement*

*as part of Phase II*

FLOOD RISK MANAGEMENT MODULE

# Define New Resiliency Actions





# Define New Resiliency Actions: Structural

The screenshot displays the 'Flood Risk Management' interface. On the left, a sidebar allows users to select options for their action, including 'Map Theme' (Map Theme 1), 'Flood Hazard' (100-Year Flood), 'Action' (Wet Floodproofing), and 'Funding' (See Funding Sources). A 'Save Action' button is visible at the bottom of the sidebar.

The main area is titled 'Action' and contains the following configuration options:

- Is your action existing or new?  Existing  New
- Select an action type:
- Select a mitigation type:
- Select a mitigation:

Four mitigation options are displayed in a grid:

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

The central map shows a street grid with a red dashed box highlighting a flood zone. The right-hand panel, titled 'Impacts', provides a summary of the selected action's effects:

- Flood Risk:** A gauge showing a low 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**

- Submitters choose a resiliency action type.
- Submitters select from a list of flood risk reduction resiliency options.
- Impacts shown are based on the selected action.

*\*All content and functionality will be subject to further refinement*

*as part of Phase II*

# Define New Resiliency Actions: Nature-Based

The screenshot shows the 'Flood Risk Management' interface. On the left, there are filters for 'Map Theme' (Map Theme 1), 'Flood Hazard' (100-Year Flood), 'Action' (Wet Floodproofing), and 'Funding' (See Funding Sources). A 'Save Action' button is visible at the bottom left. The central 'Action' form includes:
 

- Is your action existing or new? (Existing,  New)
- Select an action type: Add a Mitigation Project
- Select a mitigation type: Nature-Based Solutions
- Select a type of nature-based mitigation project: Water Farm
- Outlet Structure: Weir
- Top of Berm Elevation (ft): 127.5
- Weir Elevation (ft): 126.5
- Area (ac): 82

 A map in the center shows a red-outlined area on a satellite view. On the right, the 'Impacts' section displays:
 

- Flood Risk: A gauge showing a level between yellow and orange.
- Flood Information: Watershed Bear Creek
- Storage: 77 ac-ft Fill, 9,000 yd³
- WCS: Quantity 4

- Submitters select from a list of nature-based resiliency options.
- Nature-based solutions are being developed as part of Phase II

*\*All content and functionality will be subject to further refinement as part of Phase II*



# Define New Resiliency Actions: Funding

The screenshot displays the 'Funding' configuration screen within the Flood Risk Management module. The interface is divided into several sections:

- Left Sidebar:** Contains configuration options for the action, including 'Map Theme' (Map Theme 1), 'Flood Hazard' (100-Year Flood), 'Action' (Wet Floodproofing), and 'Funding' (Funding Source 3). Buttons for 'Save Action' and 'Cancel' are at the bottom.
- Central Panel:** Titled 'Funding', it allows users to define the action type ('Add a Mitigation Project'), mitigation type ('Structural'), and mitigation ('Wet Floodproofing'). Below this, four funding source options are presented:
 

Funding Source	Cost	Max Funding	Match Score
Funding Source 1	\$3,248	\$5,000	92
Funding Source 2	\$3,248	\$4,000	90
Funding Source 3	\$3,248	\$8,000	95
Funding Source 4	\$3,248	\$2,500	70
- Map:** A street map showing a residential area with a highlighted flood zone in yellow. A red dashed box indicates the selected area for funding configuration.
- Right Panel:** Titled 'Impacts', it provides a summary of the potential effects:
 

Category	Value
Flood Risk	Visual gauge showing a score of approximately 40.
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

- Submitters review the mitigation action considering the potential funding source that has been identified.
- Submitters can view further details on each potential funding source and then select the preferred funding option to be pursued.

*\*All content and functionality will be subject to further refinement*

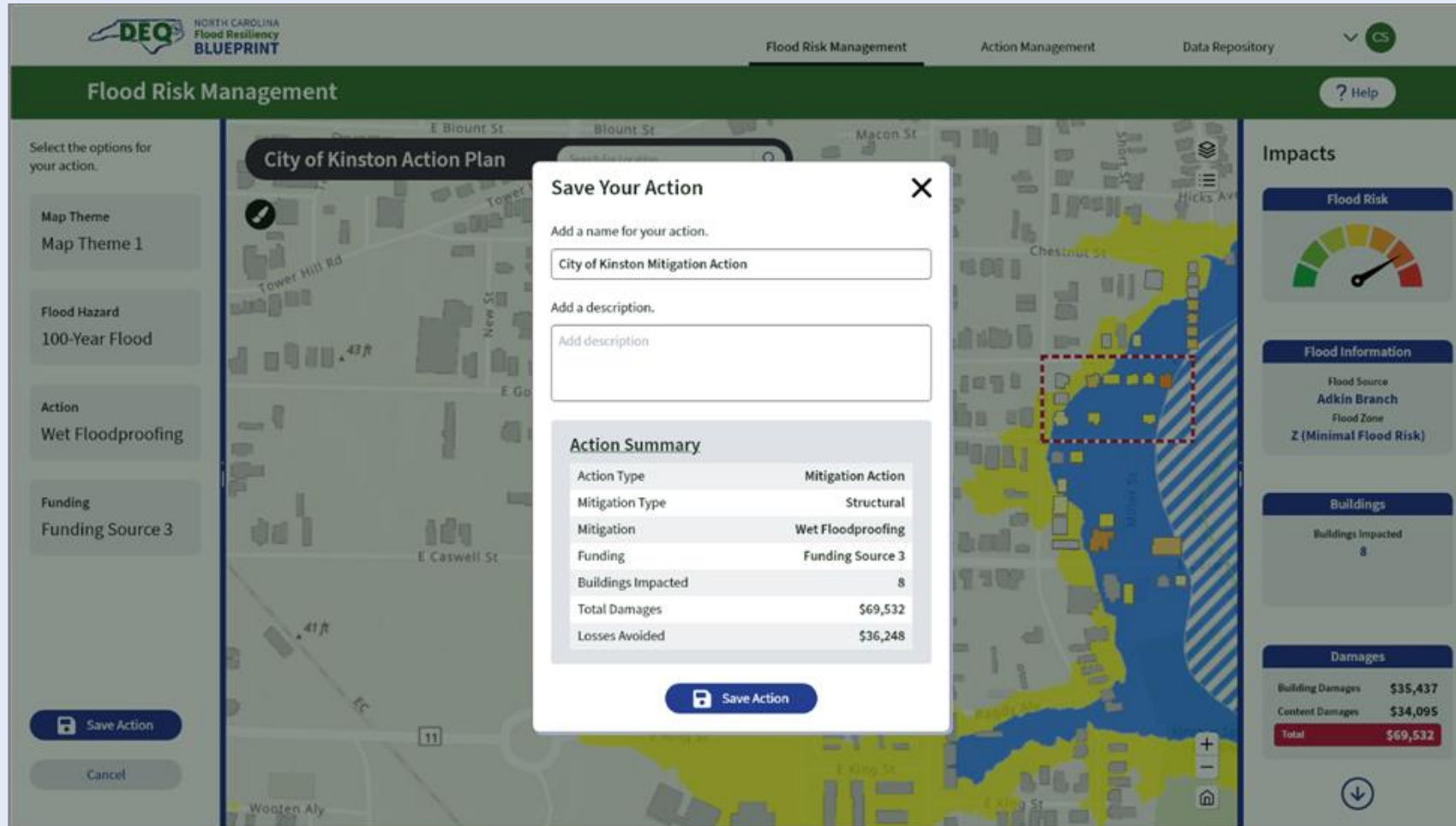
*as part of Phase II*

FLOOD RISK MANAGEMENT MODULE

# Save New Resiliency Action



# Save New Resiliency Action



- A summary of the resiliency action is shown in a window.
- Submitters provide a name and description for the new action.
- Submitters save the new action to their plan.

*\*All content and functionality will be subject to further refinement*

*as part of Phase II*

FLOOD RISK MANAGEMENT MODULE

# Action Plan Summary



# Action Plan Summary

City of Kinston Action Plan  
Action Summary

Action ID	Action Type	Project Type	Ranking	Status
Action 1	Study	Infrastructure	80	Incomplete
Action 2	Mitigation Action	Structural	76	Incomplete
Action 3	Study	Nature-Based Solution	50	Completed
Action 4	Mitigation Action	Infrastructure	67	Incomplete
Action 5	Mitigation Action	Nature-Based Solution	89	Completed
Action 6	Mitigation Action	Structural	78	Completed
Action 7	Policy Change	Structural	90	Completed
Action 8	Policy Change	Infrastructure	88	Completed
Action 9	Policy Change	Structural	88	Completed
Action 10	Policy Change	Infrastructure	88	Completed

Project Breakdown by Action Types

6	Mitigation Actions	5	Studies	3	Policy Changes
---	--------------------	---	---------	---	----------------

Project Breakdown by Project Types

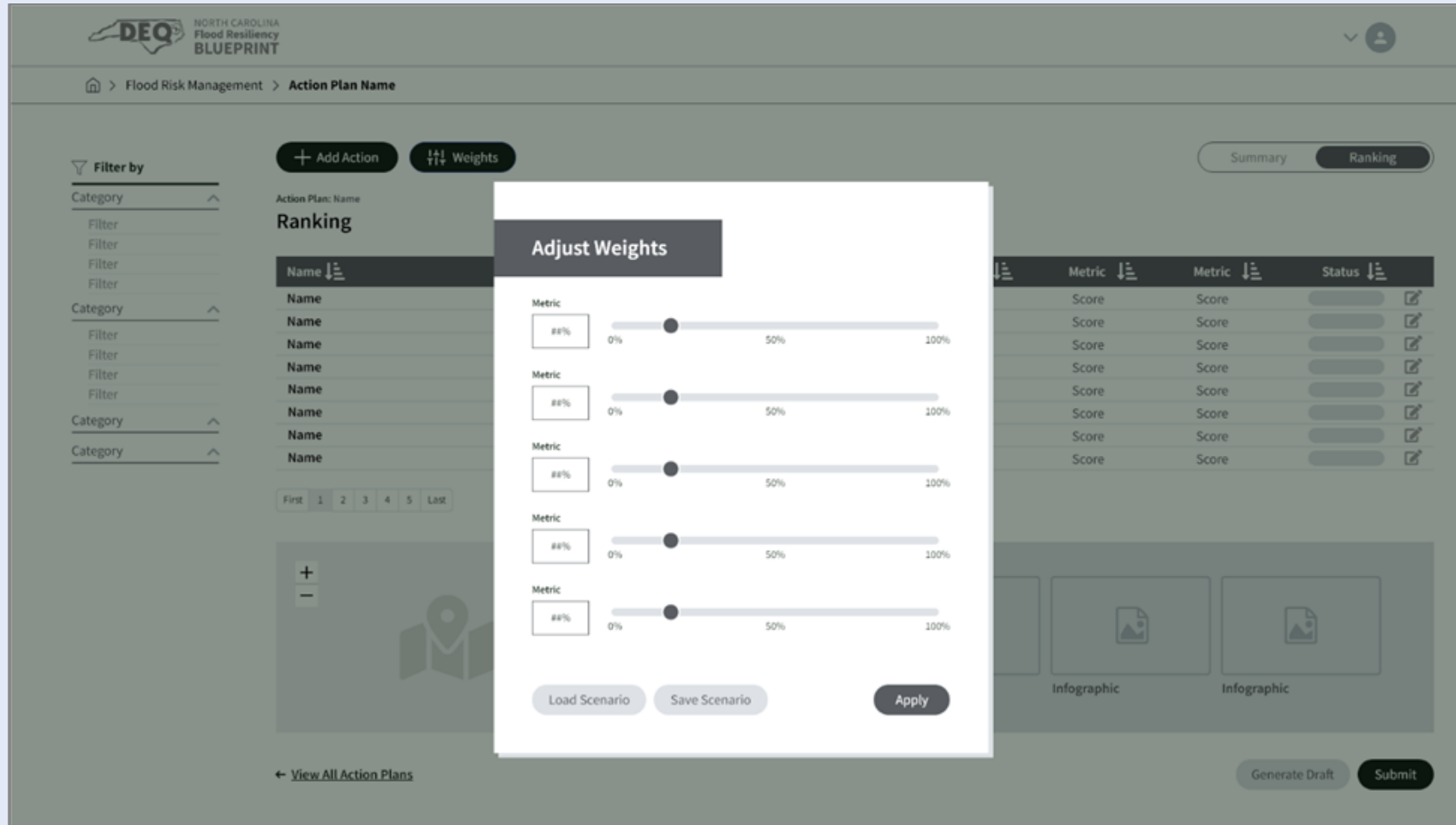
5	Structural	5	Infrastructure	4	Nature-Based Solutions
---	------------	---	----------------	---	------------------------

View All Action Plans | Generate Draft | Submit

- Submitters view a summary of actions in their plan.
- A detailed ranking view is available to view detailed metrics.

*\*All content and functionality will be subject to further refinement as part of Phase II*

# Action Plan Summary: Adjust Weights



- Submitters can adjust weighting of select metrics based to meet their specific goals.
- Weighting settings can be saved as a scenario.

*\*All content and functionality will be subject to further refinement as part of Phase II*



FLOOD RISK MANAGEMENT MODULE

**View All Action Plans**



# View All Action Plans

The screenshot displays the 'View All Action Plans' interface within the North Carolina Flood Resiliency Blueprint application. The top navigation bar includes 'Flood Risk Management', 'Action Management', and 'Data Repository'. The left sidebar contains filters for River Basins, Counties, Municipalities, and Status. The main area features a map of North Carolina with a grid overlay and a table of action plans.

Action Plan ID	Municipality	County	River Basin	Status
Bridgeton	Craven	Bridgeton	Neuse	Submitted
Clayton	Clayton	Johnston	Neuse	Certified
Kinston	Kinston	Lenoir	Neuse	In Progress
Goldboro	Kinston	Wayne	Neuse	Certified
Havelock	Havelock	Craven	Neuse	In Progress
New Bern	New Bern	Craven	Neuse	Submitted
Oriental	Oriental	Craven	Neuse	Submitted
Raleigh	Raleigh	Wake	Neuse	Submitted
Selma / Smithfield	Selma, Smithfield	Johnston	Neuse	In Progress
Seven Springs	Seven Springs	Wayne	Neuse	In Progress

- Users can see a list of all Action Plans.
- List can set to show all plans or just the user's plans.
- Plans can be filtered.

*\*All content and functionality will be subject to further refinement as part of Phase II*





Flood Resiliency Blueprint Tool

# Resiliency Action Evaluation Module



RESILIENCY ACTION EVALUATION MODULE

# Actions Summary and Ranking



# Actions Summary and Ranking

The screenshot displays the 'Resiliency Action Evaluation' interface. At the top, there are navigation tabs for 'Resiliency Action Evaluation', 'Action Management', and 'Data Repository'. A search bar and a 'Weights' button are visible. The main area is divided into three sections:

- Map:** Shows the Neuse Basin with 10 numbered locations (1-10) marked on a map of North Carolina.
- City of Kinston Action Plan Action Ranking Summary:**
  - Neuse Basin Action Strategy:** TOTAL ACTIONS: 7
  - MITIGATION ACTIONS:** 5 (3 Structural, 3 Infrastructure, 1 Nature-Based)
  - STUDIES:** 2
  - POLICY CHANGES:** 1
- Table of Actions:**

Action ID	Action Type	Subtype	Ranking	Metric	Metric	Metric	Metric	Metric	Status
<input checked="" type="checkbox"/> Action 1	Study	-	1	Score	Score	Score	Score	Score	Status
<input checked="" type="checkbox"/> Action 2	Mitigation Action	Structural	2	Score	Score	Score	Score	Score	Status
<input type="checkbox"/> Action 3	Study	-	3	Score	Score	Score	Score	Score	Status
<input type="checkbox"/> Action 4	Mitigation Action	Infrastructure	4	Score	Score	Score	Score	Score	Status
<input checked="" type="checkbox"/> Action 5	Mitigation Action	Nature-Based Solution	5	Score	Score	Score	Score	Score	Status
<input type="checkbox"/> Action 6	Mitigation Action	Structural	6	Score	Score	Score	Score	Score	Status
<input checked="" type="checkbox"/> Action 7	Policy Change	-	7	Score	Score	Score	Score	Score	Status
<input checked="" type="checkbox"/> Action 8	Mitigation Action	Infrastructure	8	Score	Score	Score	Score	Score	Status
<input checked="" type="checkbox"/> Action 9	Mitigation Action	Structural	9	Score	Score	Score	Score	Score	Status
<input checked="" type="checkbox"/> Action 10	Mitigation Action	Infrastructure	10	Score	Score	Score	Score	Score	Status

NCDEQ Program Analysts will:

- Evaluate and compare resiliency actions.
- Check to approve and include an action in the River Basin Action Strategy.
- Generate a draft report.
- Save for use in the Basin Action Strategy.

*\*All content and functionality will be subject to further refinement as part of Phase II*

# Actions Summary and Ranking: Adjust Weights

The screenshot displays the 'Resiliency Action Evaluation' interface. A central 'Adjust Weights' dialog box is open, allowing users to adjust the weights for five different metrics. Each metric is represented by a slider and a percentage input field. The background shows the 'Action Ranking' section with a list of actions and summary statistics for Mitigation Actions (5), Studies (2), and Policy Changes (1).

Action ID	Action Type	Subtype
<input checked="" type="checkbox"/> Action 1	Study	-
<input checked="" type="checkbox"/> Action 2	Mitigation Action	Structural
<input type="checkbox"/> Action 3	Study	-
<input type="checkbox"/> Action 4	Mitigation Action	Infrastructure
<input checked="" type="checkbox"/> Action 5	Mitigation Action	Nature-Based Solution
<input type="checkbox"/> Action 6	Mitigation Action	Structural
<input checked="" type="checkbox"/> Action 7	Policy Change	-
<input checked="" type="checkbox"/> Action 8	Mitigation Action	Infrastructure
<input checked="" type="checkbox"/> Action 7	Mitigation Action	Structural
<input checked="" type="checkbox"/> Action 8	Mitigation Action	Infrastructure

Summary Statistics:

- MITIGATION ACTIONS: 5
- STUDIES: 2
- POLICY CHANGES: 1
- Structural: 3
- Infrastructure: 3
- Nature-Based: 1

- NCDEQ can adjust weighting of select metrics based to meet the goals of the Basin Action Strategy.
- Weighting settings can be saved as a scenario.

*\*All content and functionality will be subject to further refinement as part of Phase II*



Flood Resiliency Blueprint Tool

# Action Management Module



ACTION MANAGEMENT MODULE

# Actions Overview



# Actions Overview

The screenshot displays the 'Action Management' interface. At the top left is the DEQ North Carolina Flood Resiliency Blueprint logo. Below it is a breadcrumb trail: 'Action Management'. On the left side, there is a 'Filter by' section with multiple 'Category' dropdowns and 'Filter' input fields. A search icon and a home icon are also present. The main area is titled 'Action Summary' and contains a table with the following columns: 'Name', 'Attribute', 'Attribute', 'Attribute', and 'Attribute'. The table lists 18 rows, each with 'Name' and 'Attribute' text. At the bottom of the table, there is a pagination control showing 'First', '1', '2', and 'Last'. An 'Export' button is located at the bottom right of the table area.

- Users will see a list of all Actions.
- Users can filter actions by criteria such as geographical area, jurisdiction, mitigation type.
- Users select an action to open the Action Management Dashboard.

*\*All content and functionality will be subject to further refinement as part of Phase II*



ACTION MANAGEMENT MODULE

# Action Management Dashboard



# Actions Management Dashboard

**City of Kinston Mitigation Action**  
Kinston, NC

Action Plan: City of Kinston Action Plan
Action ID: #####
This is a description of the City of Kinston Mitigation Action.
Action Type: Mitigation Action
Mitigation Type: Structural
Mitigation: Wet Floodproofing

**Flood Information & Risk**

Flood Source: Adkin Branch  
Flood Zone: Z (Minimal Flood Risk)

Current: [Gauge showing ~40%]    Mitigation: [Gauge showing ~60%]

**Damages**

	Buildings Affected	Estimated Building Damages	Losses Avoided
Residential	10	\$ 35,437	\$ 10,000
Commercial	0	\$ 0	\$ 0
Public Facilities	0	\$ 0	\$ 0
Community Facilities	0	\$ 0	\$ 0
<b>TOTAL</b>	<b>10</b>	<b>\$ 35,437</b>	<b>\$ #</b>
Critical Facilities	5	\$ 20,437	\$ #

**Status**  
Last Updated: [Date]  
Status Description: [Text]  
View

**Schedule & Milestones**  
Milestone Description: [Text]  
Due Date: [Date]  
View

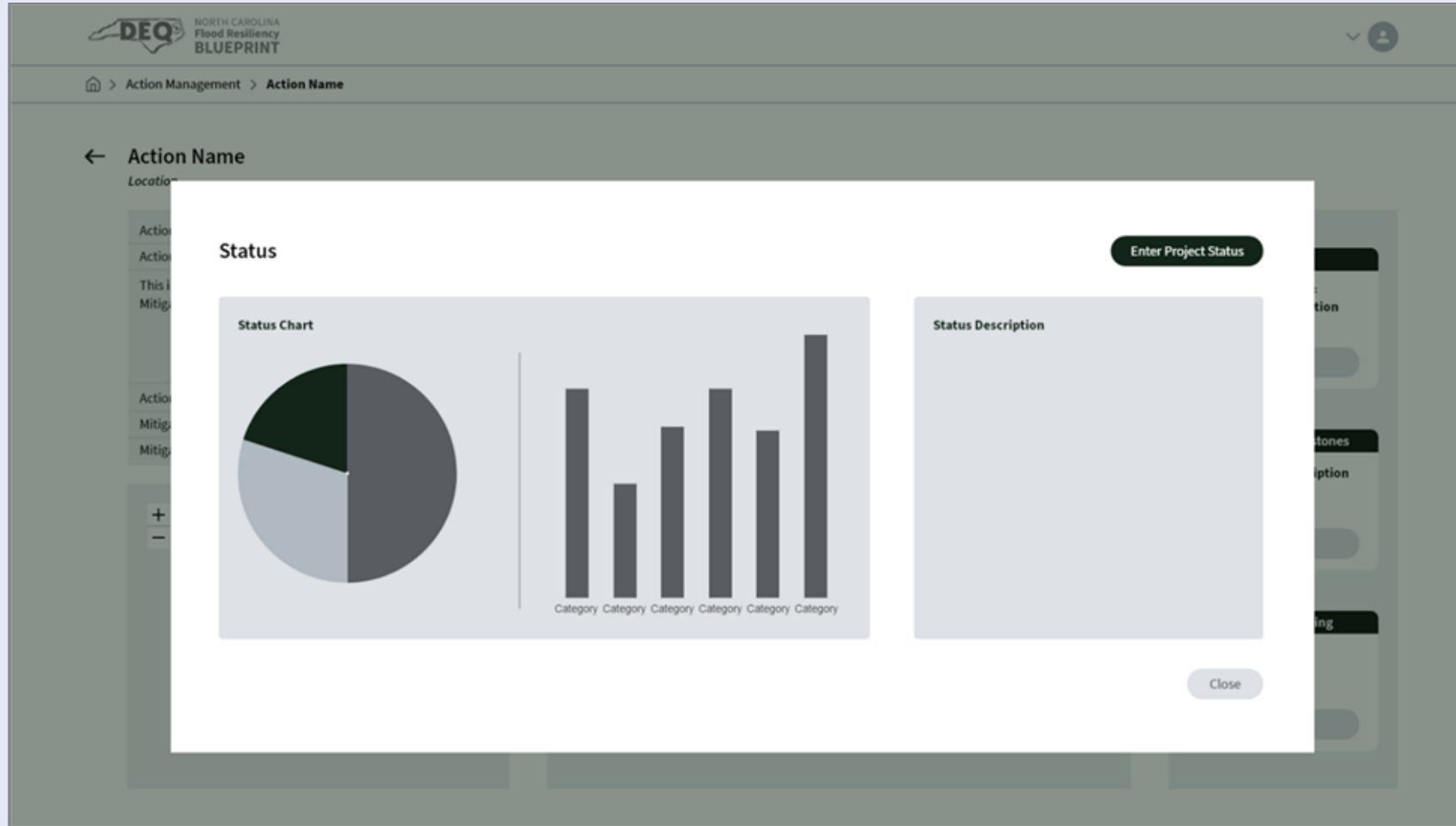
**Finance Tracking**  
Total Funding: \$ 8,000  
View

- Users view information about an action in the dashboard.
- Metrics are shown are determined by factors including action type and available data.
- Users click on the individual panels to show more details.

*\*All content and functionality will be subject to further refinement*

*as part of Phase II*

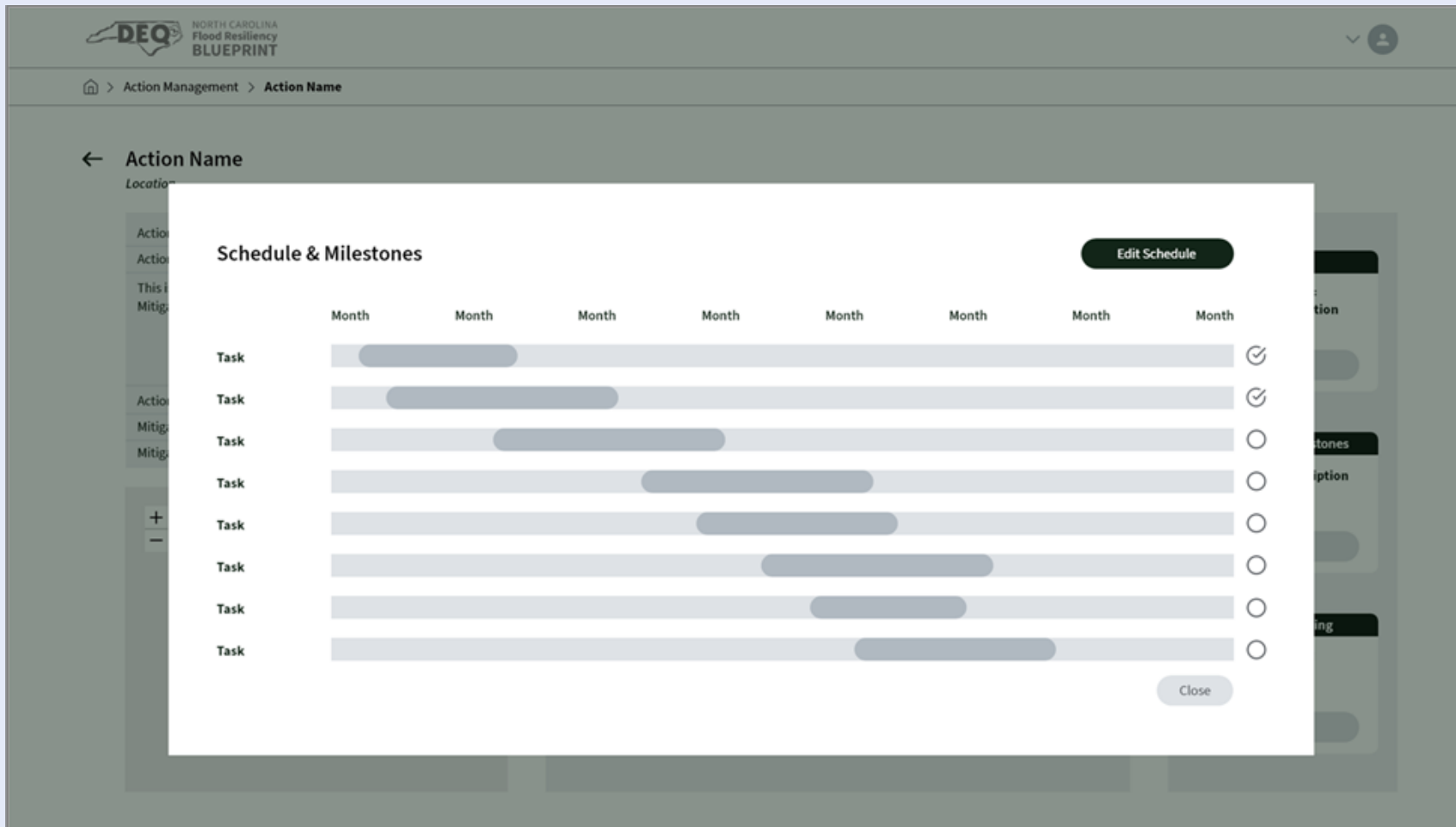
## Actions Management Dashboard: Status Details



- Users view status details in a window.
- Submitters click on the **Enter Status Update** button to enter their latest status update

*\*All content and functionality will be subject to further refinement as part of Phase II*

## Actions Management Dashboard: Schedule & Milestones Details

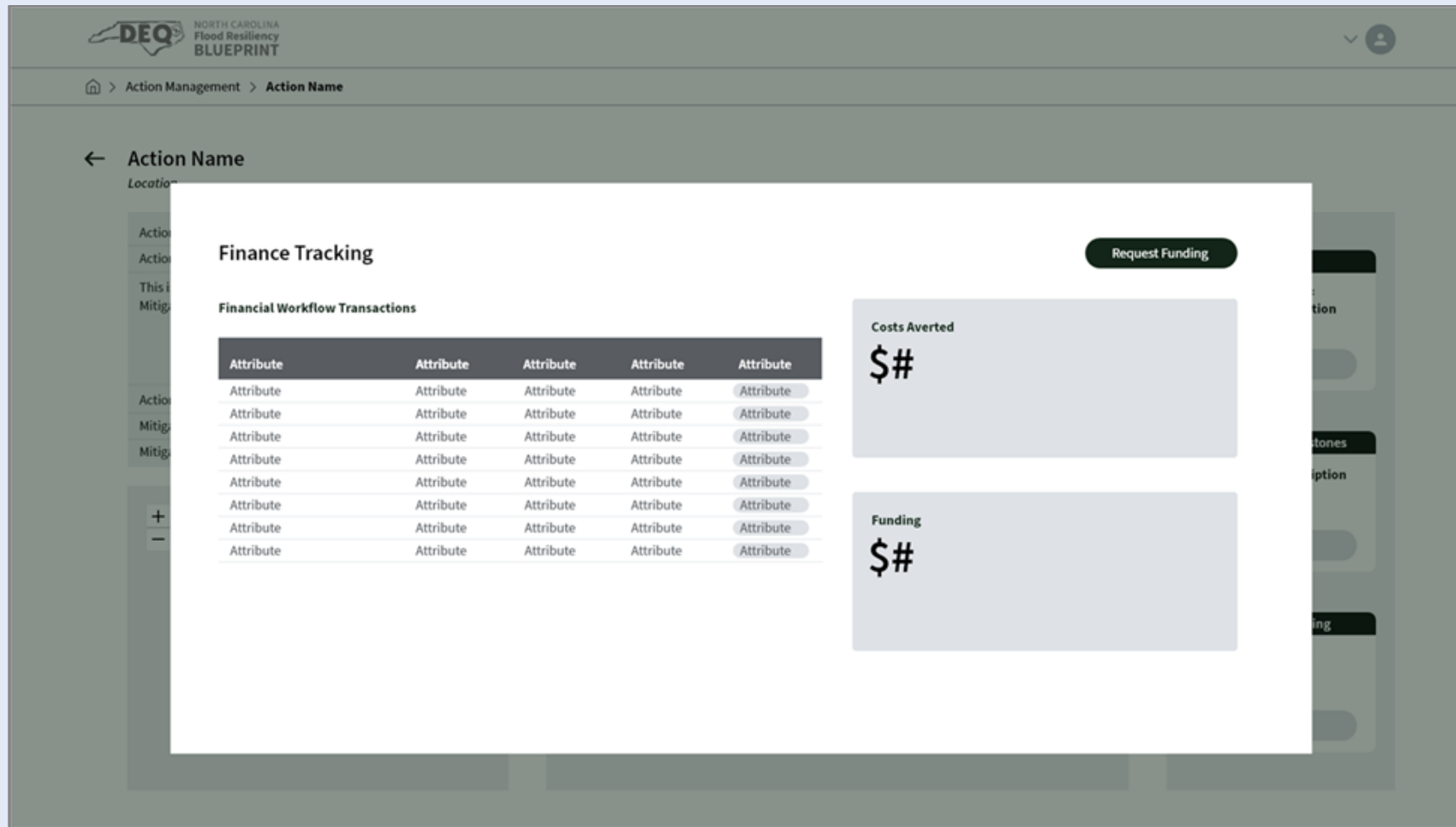


- Users view schedule and milestone details in a window.
- NCDEQ click on the **Edit Schedule** button to make updates to the schedule and to sign off on milestones.

*\*All content and functionality will be subject to further refinement*

*as part of Phase II*

# Actions Management Dashboard: Finance Tracking Details



- Users view detailed financial information associated with the action in a window.
- Submitters click the **Request Funding** button to request that NCDEQ release funds.

*\*All content and functionality will be subject to further refinement*

*as part of Phase II*

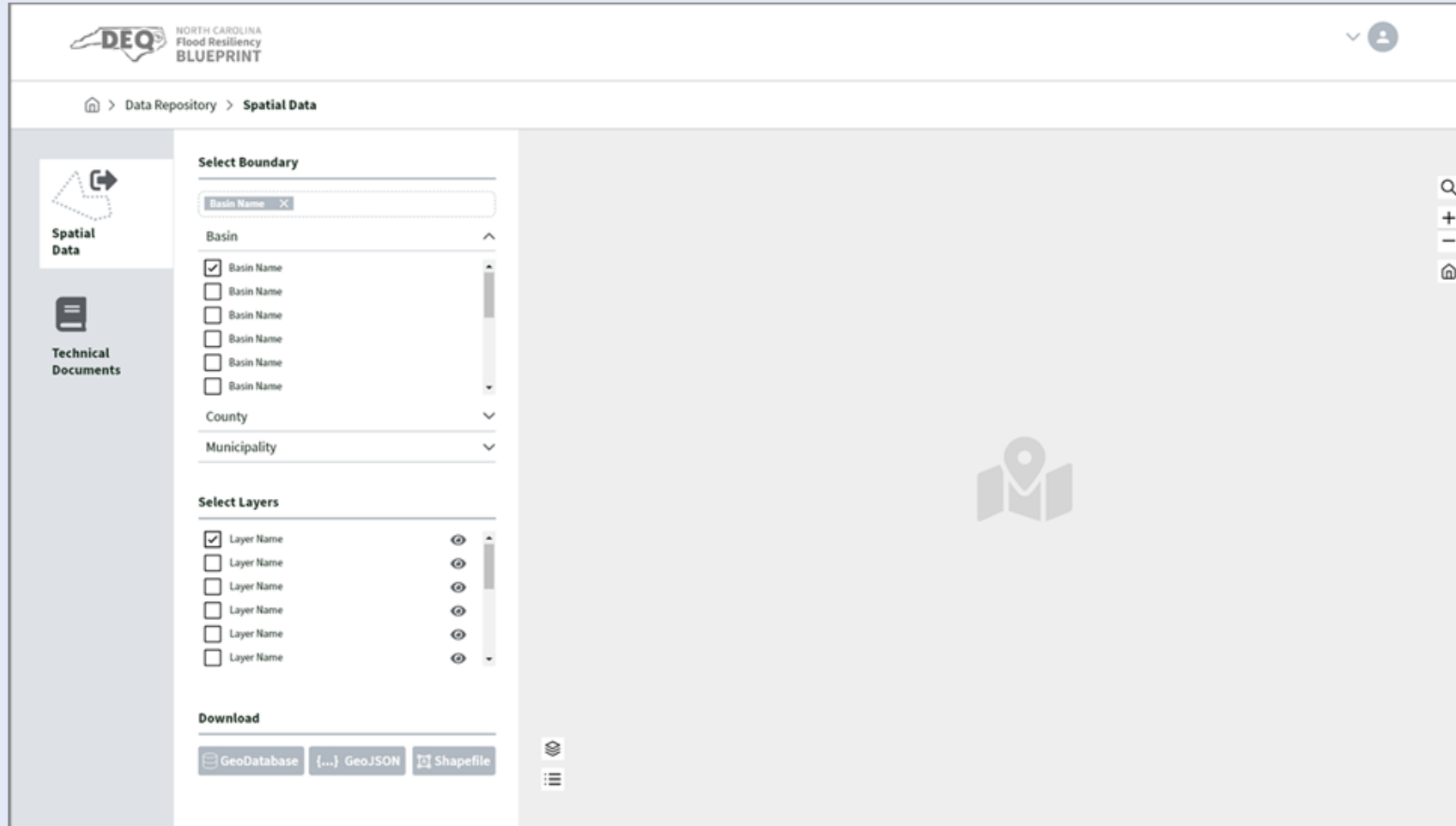


Flood Resiliency Blueprint Tool

# Data Repository



# Spatial Data

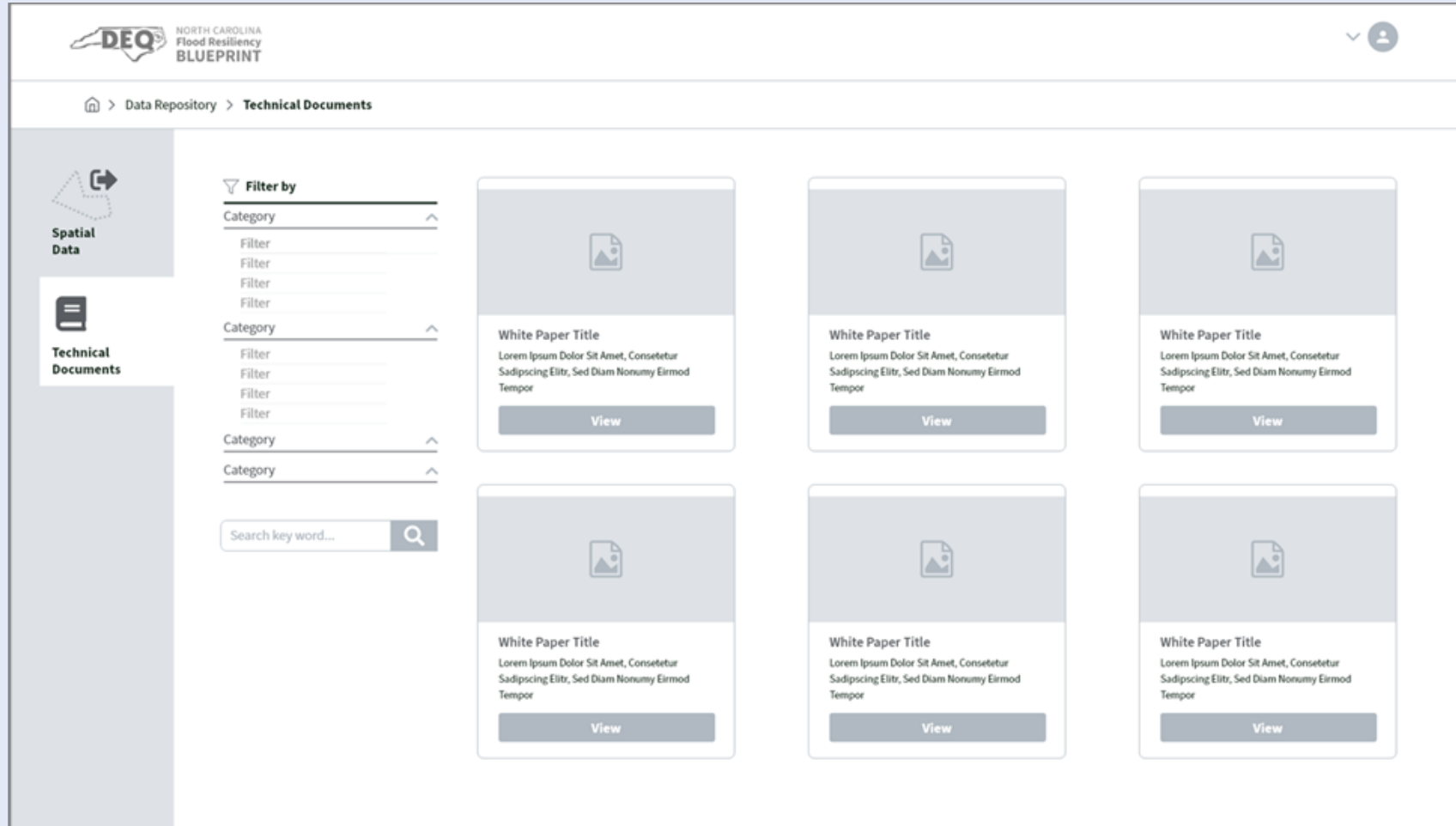


- Users search spatial data associated with the Flood Resiliency Blueprint.
- Users download spatial data in various formats.
- NCDEQ maintains spatial data in the Data Repository.

*\*All content and functionality will be subject to further refinement as part of Phase II*



# Technical Documents



- Users search technical documents associated with the Flood Resiliency Blueprint.
- Users view or download the documents.
- NCDEQ manages documents in the Data Repository.

*\*All content and functionality will be subject to further refinement as part of Phase II*



# Tools Questions





# Preliminary Draft Neuse Action Strategy

Nathan Slaughter



# Discussion Overview

Review the Preliminary Neuse River Basin Flood Resiliency Action Strategy (25 minutes)

- **Preliminary** Version
- NCDEQ Selection of the Neuse
- Pre-Identified Action Strategies
- Previously Identified "Priorities"
- Recommendation Categories
- Recommendations
- Next Steps
- Questions/Comments

# Preliminary Version

This is the first iteration of the Preliminary Neuse River Basin Flood Resiliency Blueprint. Information obtained from the following sources will refine the Action Strategy:

1. **YOU!** TAG and PAG member feedback and comment on the document
2. Additional Modeling (2 Tier Approach)
  - Additional modeling will result in additional vulnerability and risk assessment. New actions will be proposed to address newly identified vulnerability/risk.
3. Neuse Stakeholder Workshops (Early 2024)

DRAFT

# Selection of the Neuse

NCDEQ selected the Neuse River Basin as the pilot basin for a variety of reasons including:

1. Flood Risk and Vulnerability
  - Recent Catastrophic Events
  - Substantial Population Increase
  - Changing Conditions
2. High Capability
  - Robust Data from Prior Studies
  - Robust Existing Stakeholder Efforts
  - Adaptive Capacity
  - Significant Natural Resources

# Pre-Identified Action Strategies

The Action Strategy heavily relies on pre-identified action strategies from prior plans/studies for the following reasons. This strongly aligns with Blueprint's goal is to ***acknowledge, support, and leverage existing efforts***. The following plans are included in the Action Strategy:

- Neuse River Basin Flood Analysis and Mitigation Strategies Study
- Flood Abatement Assessment for the Neuse River Basin
- Improving North Carolina's Resilience to Coastal Riverine Flooding
- Natural Infrastructure Flood Mitigation Program
- Supporting EJ in Connect Coastal Communities Through a Regional Approach to Collaborative Community Science
- Hurricane Matthew Resilient Redevelopment Plans (HMRRP)
- Regional Hazard Mitigation Plans (RHMP)
- NCORR RISE-Regional Resilience Portfolios (RRP)
- Resilient Coastal Communities Program (RCCP)
- Financial Risk of Flood Events in Eastern North Carolina
- Triangle J COG Water Resources Program



# Previously Identified "Priorities"



Over 1,000 existing projects were inventoried for consideration and inclusion in the Action Strategy. The following aspects were considered to help refine projects most applicable to the basin:

- Project is relevant to Blueprint and the program's goals
- Project received a "high priority" ranking within the respective plan
- Plans/studies that did not indicate project's priority ranking were still inventoried and considered for inclusion
- Many of these plans/studies were Neuse-specific
- Projects determined to have a larger scale or basin-wide impact were included in the first iteration of the Action Strategy

**NOTE: Local actions were reviewed, contributed to, and align with the overarching recommendations. They have been inventoried and will be included in future iterations of the Action Strategy based on stakeholder feedback.**

# Recommendation Categories

## 1. Policy

**6 Overarching  
Recommendations**

64 Pre-Identified Projects  
Proposed

## 2. Projects

**10 Overarching  
Recommendations**

70 Pre-Identified Projects  
Proposed

## 3. Modeling

**13 Overarching  
Recommendations**

All NEW Recommendations  
Proposed

# Recommendations

Category	Recommendation
Policy	1. Highlight Localized Projects in Under-Resourced Communities
	2. Encourage Implementation and Enforcement of Land Use Policies and Regulations
	3. Encourage Local Participation in the NFIP
	4. Facilitate Collaboration Between Different Levels of Government, Community Orgs., and Private Sector
	5. Develop New and Update Existing Planning Documents
	6. Invest in Continued Research to Support Increased Flood Resilience

# Recommendations

Category	Recommendation
Projects	1. Invest in Resilient Infrastructure to Mitigate Flood Impacts
	2. Design and Create Public Spaces that can Double as Flood Resilience Areas
	3. Continue Elevation, Acquisition, and Relocation of Structures in Flood-Prone Areas
	4. Perform Resource Studies and Analysis Using Innovative Technologies to Identify Risk
	5. Implement a Systematic and Regular Monitoring Program to Clear Streams

# Recommendations

Category	Recommendation
Projects	6. Support the Implementation of Nature-Based Solutions
	7. Implement Appropriate “Hardening” Techniques for Critical Infrastructure and Facilities
	8. Enhance and Expand Early Warning Systems
	9. Conduct Capacity Building Programs and Training Sessions for Local Government, EM Responders, and Community Members
	10. Develop a Comprehensive Inventory of All Actions Previously Identified to Heighten Flood Resilience

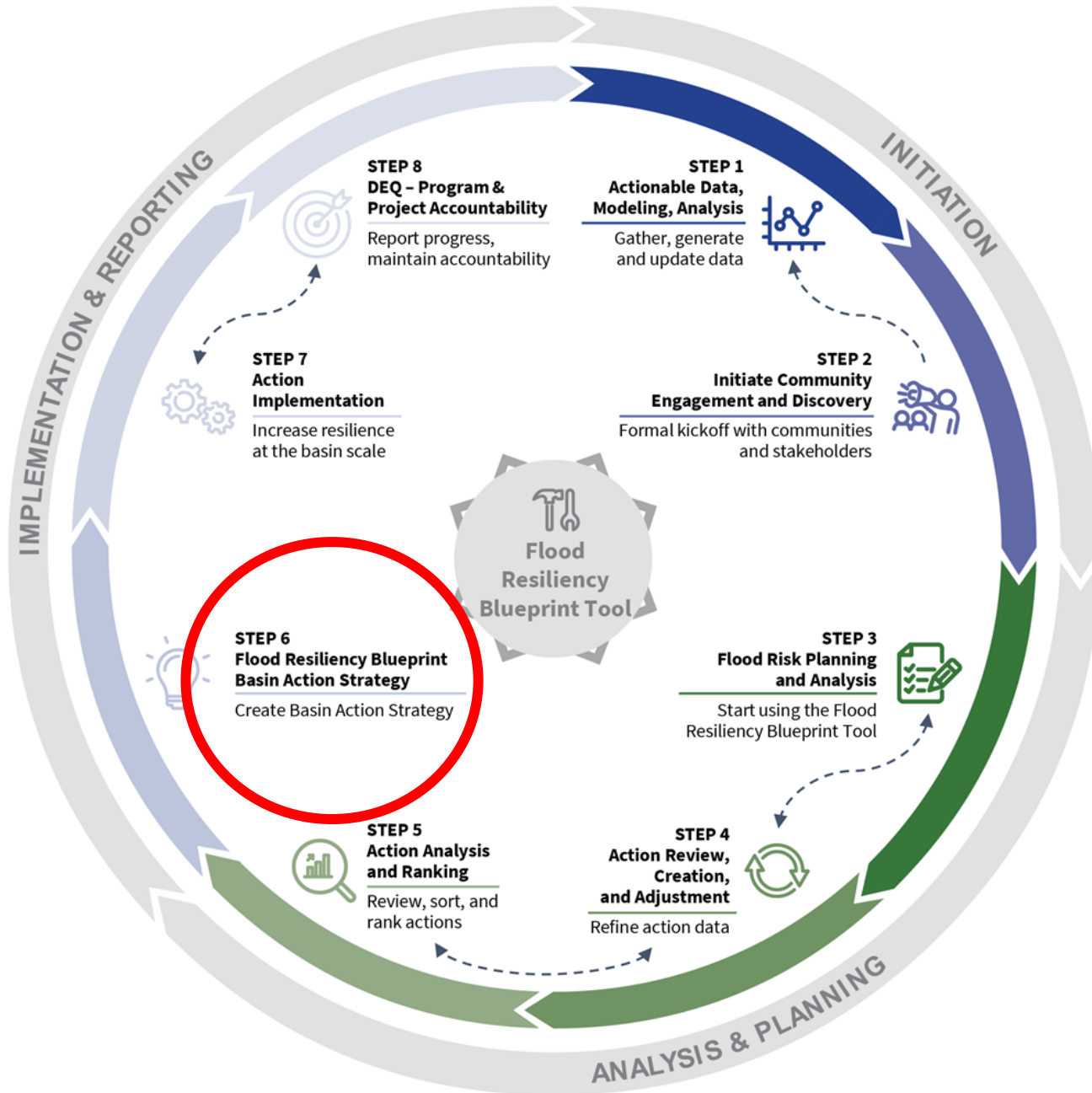
# Recommendations

Category	Recommendation
Modeling	1. Utilize 2D Modeling Methods
	2. Leverage Available HEC-RAS Model Geometry
	3. Complete and Update the Available Advisory 2D Modeling from NCFMP
	4. Use 2D HEC-RAS Models to Evaluate Basin-Wide Effects of Implementing Potential Mitigation Strategies
	5. Leverage RAS Mapper Terrain Modifications to Efficiently Model Mitigation Alternatives
	6. Use RAS Mapper Within HEC-RAS for Initial Floodplain Mapping Generation and Development of Raster Products
	7. Use Spatial-Varied Precipitation Data Within HEC-RAS to Calibrate Rain-on-Grid Models to Known Events

# Recommendations

Category	Recommendation
Modeling	8. Leverage Stakeholder Relationships with USACE, USGS, and University of North Carolina Renaissance Computing Institute
	9. Use ADCIRC Coastal Modeling Results (or similar) as Boundary Conditions for Upland Riverine 2D Models
	10. Leverage Stakeholder Relationships with USGS for Groundwater Modeling Using MODFLOW (or similar)
	11. Maintain Consistency with the Wide Range of Storm Frequencies Currently Being Modeled in NCEM Advisory 2D Modeling Effort
	12. Implement the Freeboard Approach Recommended by FEMA Through FFRMS
	13. Explore or Pilot One HUC-10 Basin to Include Probabilistic Modeling to Determine Flood Hazard Areas

# Flood Resiliency Blueprint Program – Key Components and Workflow



## Current Status

*Nuanced due timing/running concurrently with other components of Blueprint*

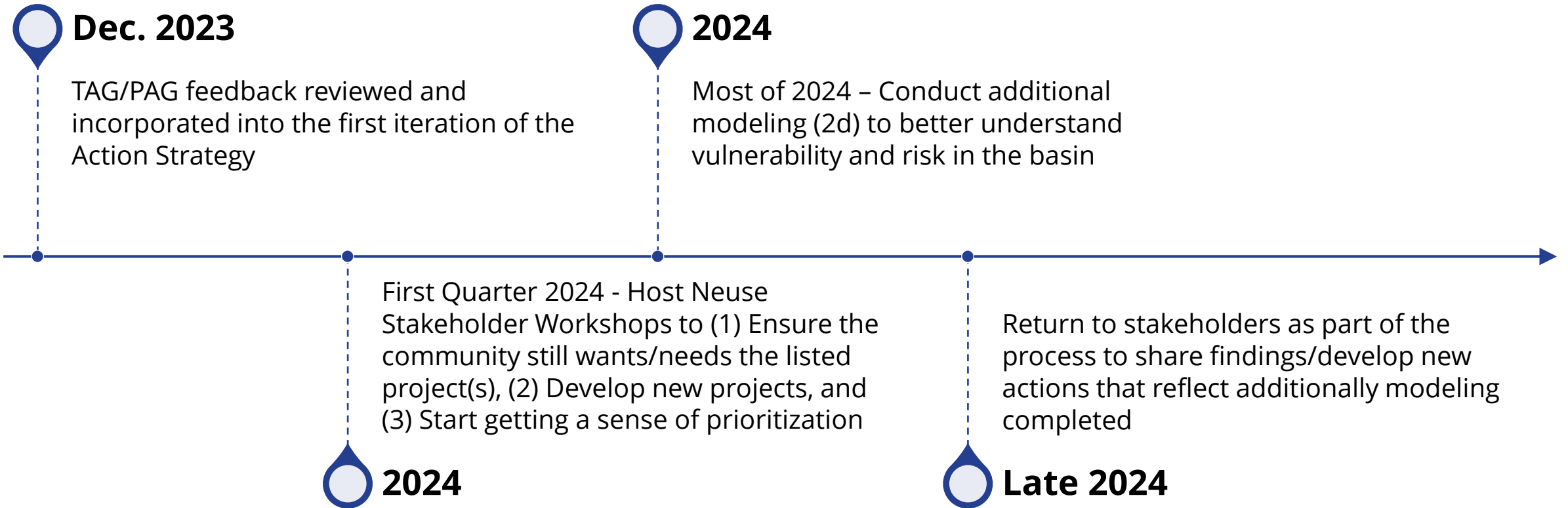
**Step 6:** Create Basin Action Strategy

**Steps 1-5:** Will be revisited in 2024 for future refinements of the Action Strategy



# TENTATIVE TIMELINE SUBJECT TO CHANGE

## What's Next?





# Questions

Nathan Slaughter





# Congratulations

- Milestones for accomplishments for the year.
- 





# Next Steps

Next Steps

