North Carolina Flood Resiliency Blueprint Technical Advisory Group Meeting #3

Virtual Meeting
June 30, 2023
10:00 am – 12:00 pm EST
1:00 pm – 3:00 pm EST
3:00 pm – 5:00 pm EST

Meeting Agenda

- Review of Information to this point for the Flood Resiliency Blueprint
  - Responses from the last TAG questions
  - Summary of Community Engagement
  - Website
- Design for the Decision Support Tool
- Deep Dive into Draft Governance Schema
- Review of Task 3 expectations
- Open Discussion

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Department of Environmental Quality

Review of Blueprint

(work to date)

Review

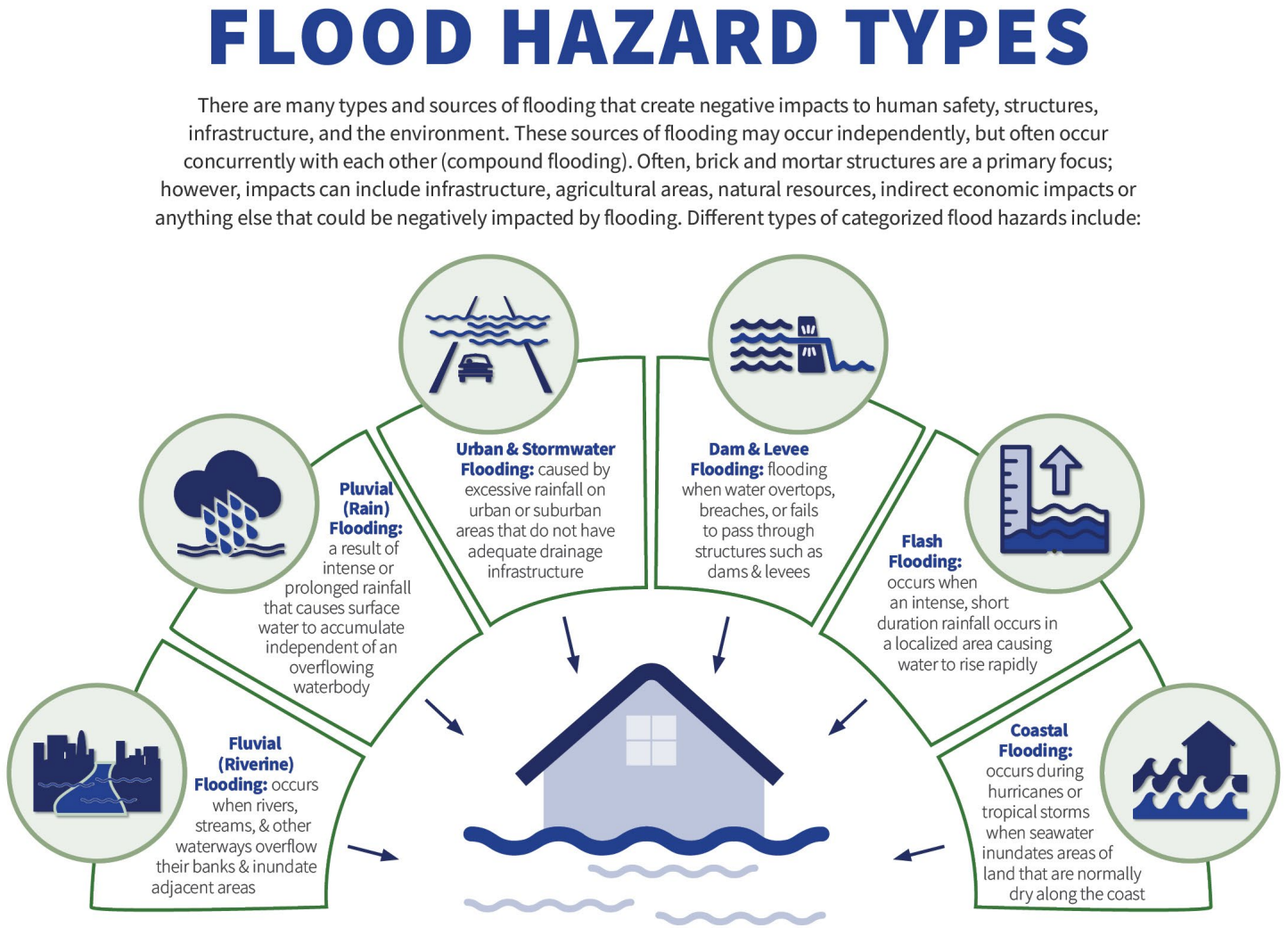
Responses from last meeting

Tag Meeting 2 Action

Update of the infographic

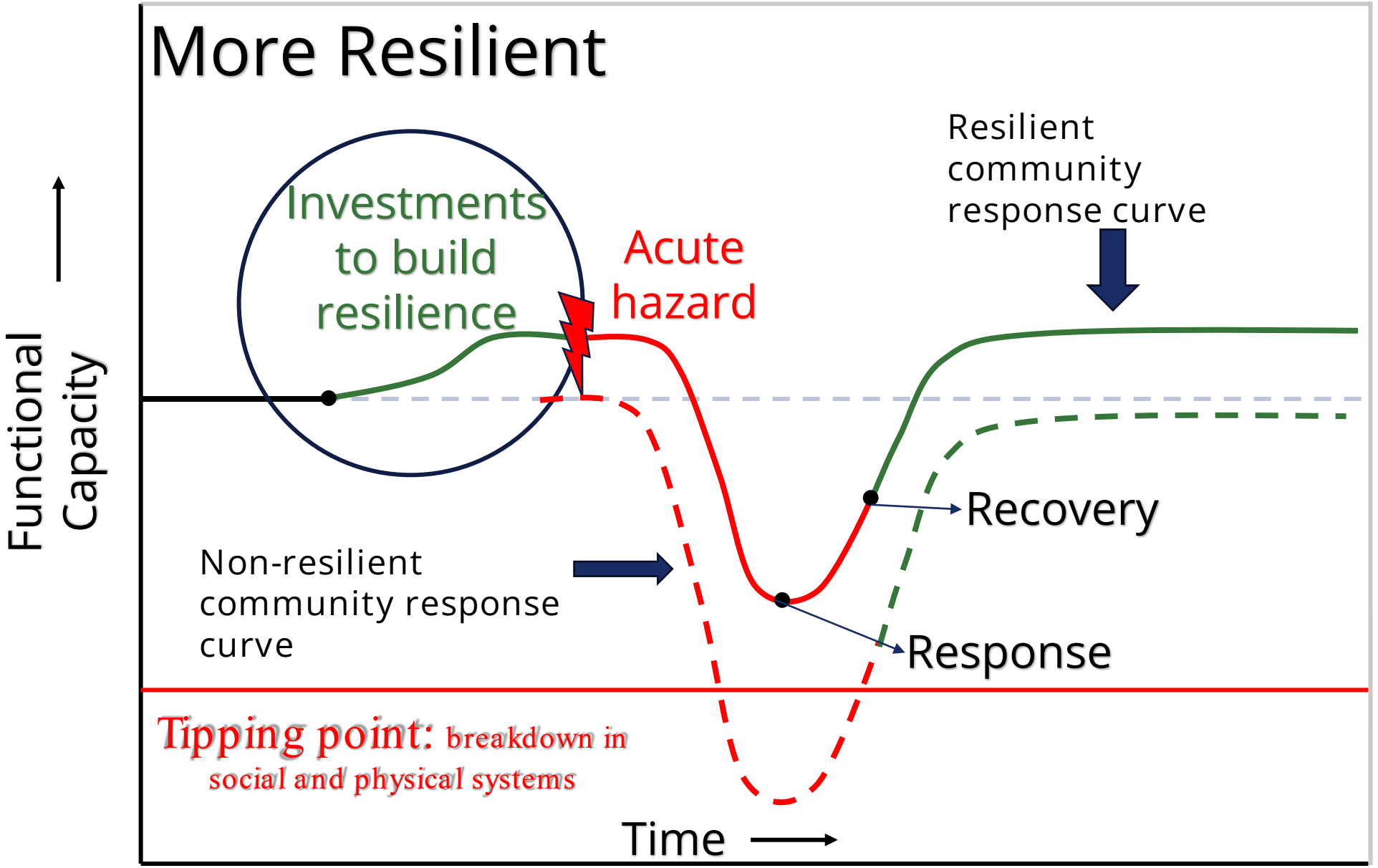
- Issue: Pluvial, Urban & Stormwater flooding, and Flash Flooding definitions were alike.

- Updated and clarified.



Tag Meeting 2 Actions

Does insurance impact anything that Blueprint is trying to accomplish (and vice versa)	• Flood insurance will definitely be a topic of interest within Task 3 as we develop recommendations. Insurance will not impact what the Blueprint is trying to accomplish, but it will be something that will be included as a mitigation action – possibly providing greater outreach and support for property owners to understand the need for flood insurance, for example. This could be included in Subtasks 3.4.
Determine what storm frequency we are basing the plan on	• This will be directly addressed in Subtask 3.6. The Vulnerability/Risk/Impact TAG is designated as the primary TAG for review and Hazard Identification is also included. As with all draft documents, it will be readily available for all TAG members to review.
Look into how to utilize resources we have to help increase NC's capacity to take in funding and manage it	• This has been included in Subtasks 2.6 and 2.9 and will again be addressed from the perspective of recommendations as part of Subtasks 3.2, 3.3, and 3.12, as well as being an element of the overall governance scheme.



- Investment in resilience, leads to better outcomes before, during and after natural disasters.
- What is a community's "Tolerance" to flood hazards?

Flood Resiliency Blueprint Tentative Timeline

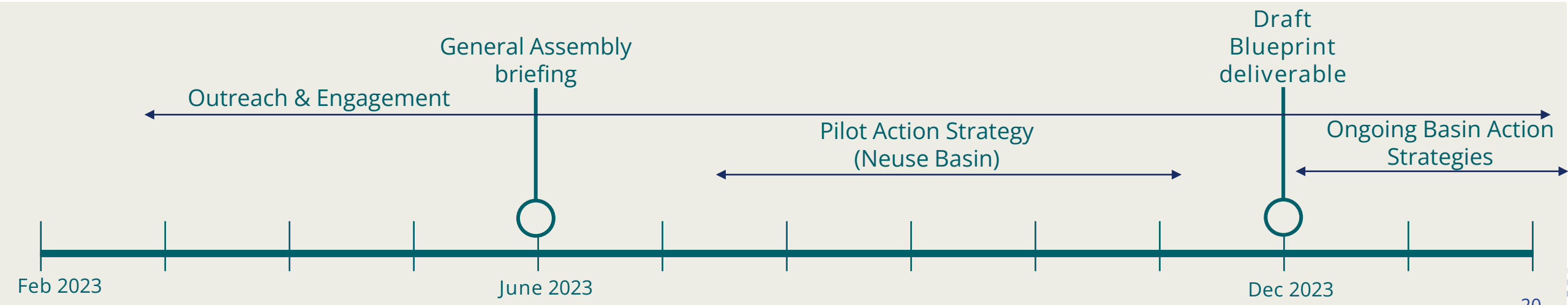
2022 Outputs: Outreach and engagement to develop scope of work; awarded Phase I contract

2023 Outputs:

- Requirements for online decision support tool
- Draft NC Flood Resiliency Blueprint
- Draft Neuse Basin Action Strategy and beta-testing tool

2024: Statewide validation and testing of the online tool in NC basins and development of basin-specific action strategies

2025+: Ongoing maintenance, administration, updates, etc.



Community Engagement

Summary

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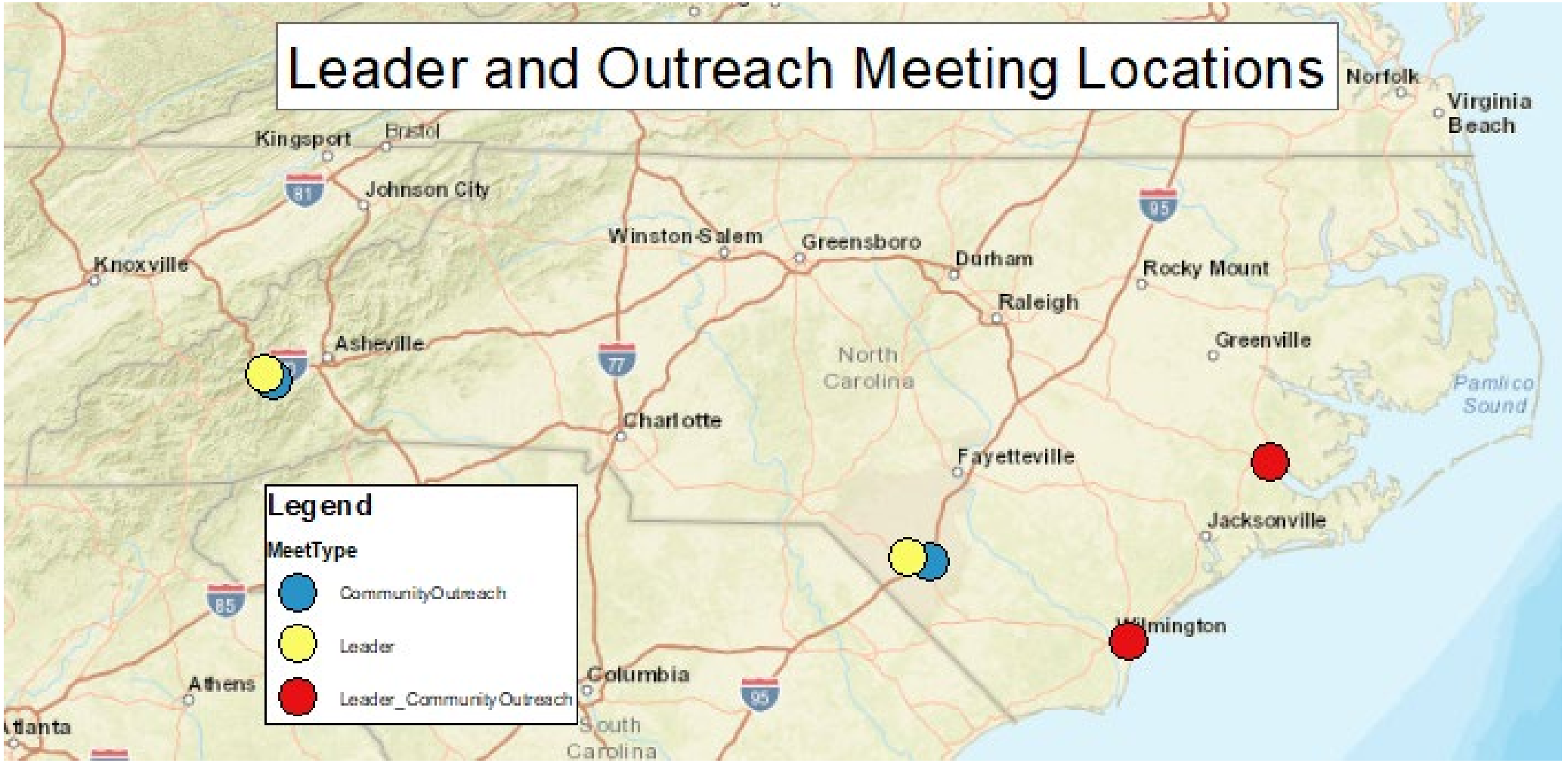
Meeting Locations



Engagement

- New Bern- June 1st
  - Local Leaders (11)
  - Neuse River Basin (9)
  - Community Outreach (26)

- Major Topics
  - Changes in Kinston impacts downstream
  - Understanding of what assistance is available after an event

Engagement

- Lumberton June 8th
  - Local Leaders (8)
  - Community Outreach(19)

- Major Topics
  - Regulations around grants (if you use buyout money you can not rebuild)
  - Cohesiveness around actions

Engagement

- Wilmington – June 9th
  - Local Leaders (3)
  - Community Outreach (29)

- Major Topics
  - Ability to accomplish actions efficiently and quickly after an event
  - Data and Science Focused actions

Engagement

- Haywood – June 22nd
  - Local Leaders(20)
  - Community Outreach(19)

- Major Topics
  - Storm debris in the river
  - Number of organizations with regulations to clean up after an event

Looking Forward

- Moment for Feedback from TAGs
  - Lessons learned
  - Suggestions for Future Basin Meetings
- Basin Goals for Community Outreach
- Schedule a Virtual meeting in July that covers local leader's content.
  - All invited to attend.
  - No specific basin information
- Will be recorded and provided on the website.

Website

- The Flood Resiliency Blueprint Website is undergoing final revisions and will be released soon.

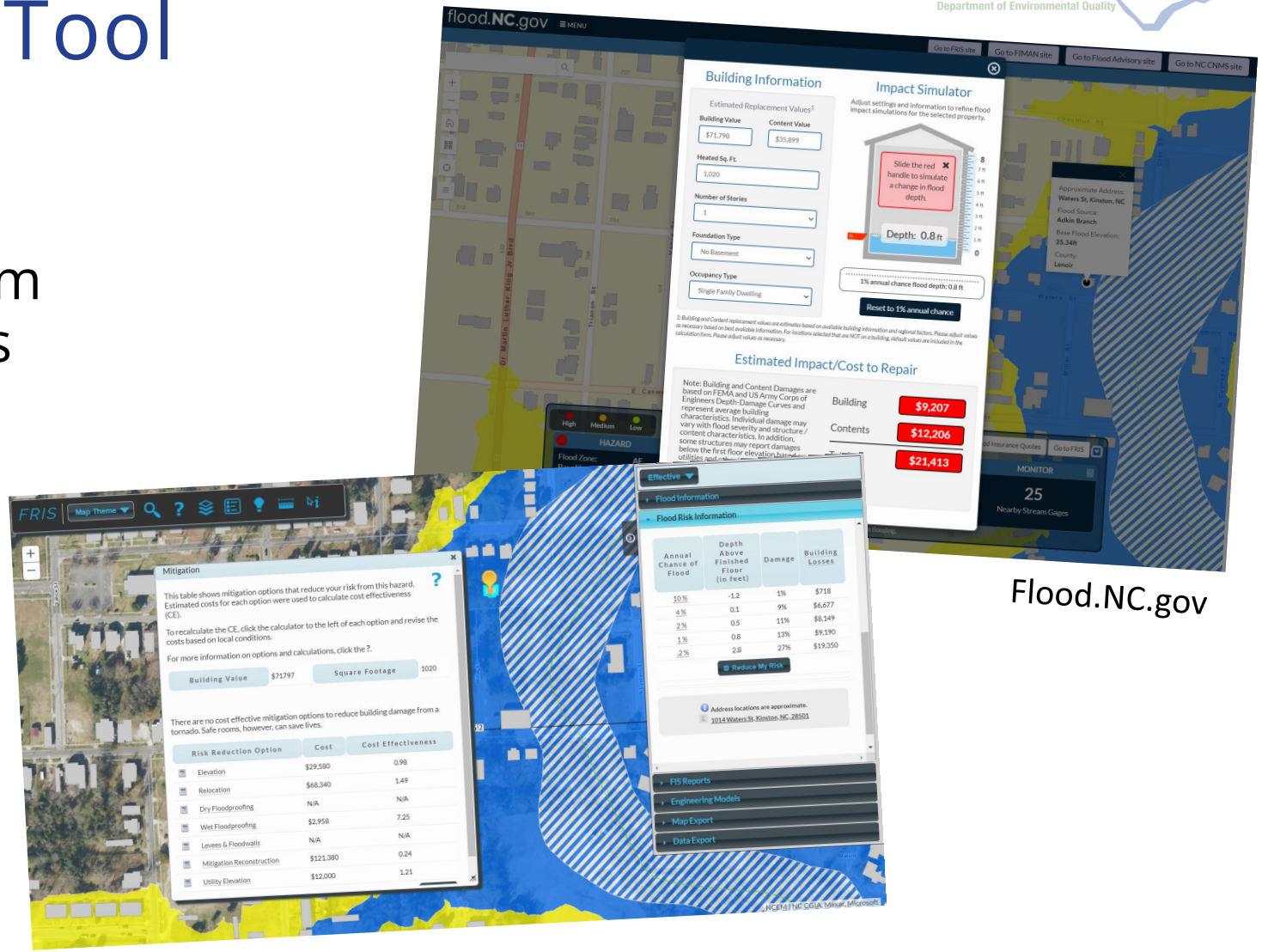
Decision Support Tool Design

Facilitator

Decision Support Tool

The Decision Support Tool reference data and logic from existing North Carolina tools

- Building damages and mitigation data from NC FRIS and Flood.NC.gov
- Damage rollups logic from NC FIMAN



Flood.NC.gov

NC FRIS

Decision Support Tool

The Decision Support Tool will assist with:

- Community level mitigation planning
- Prioritization, including factors such as:
  - Social vulnerability
  - Nature-based solutions
- Mitigation project management

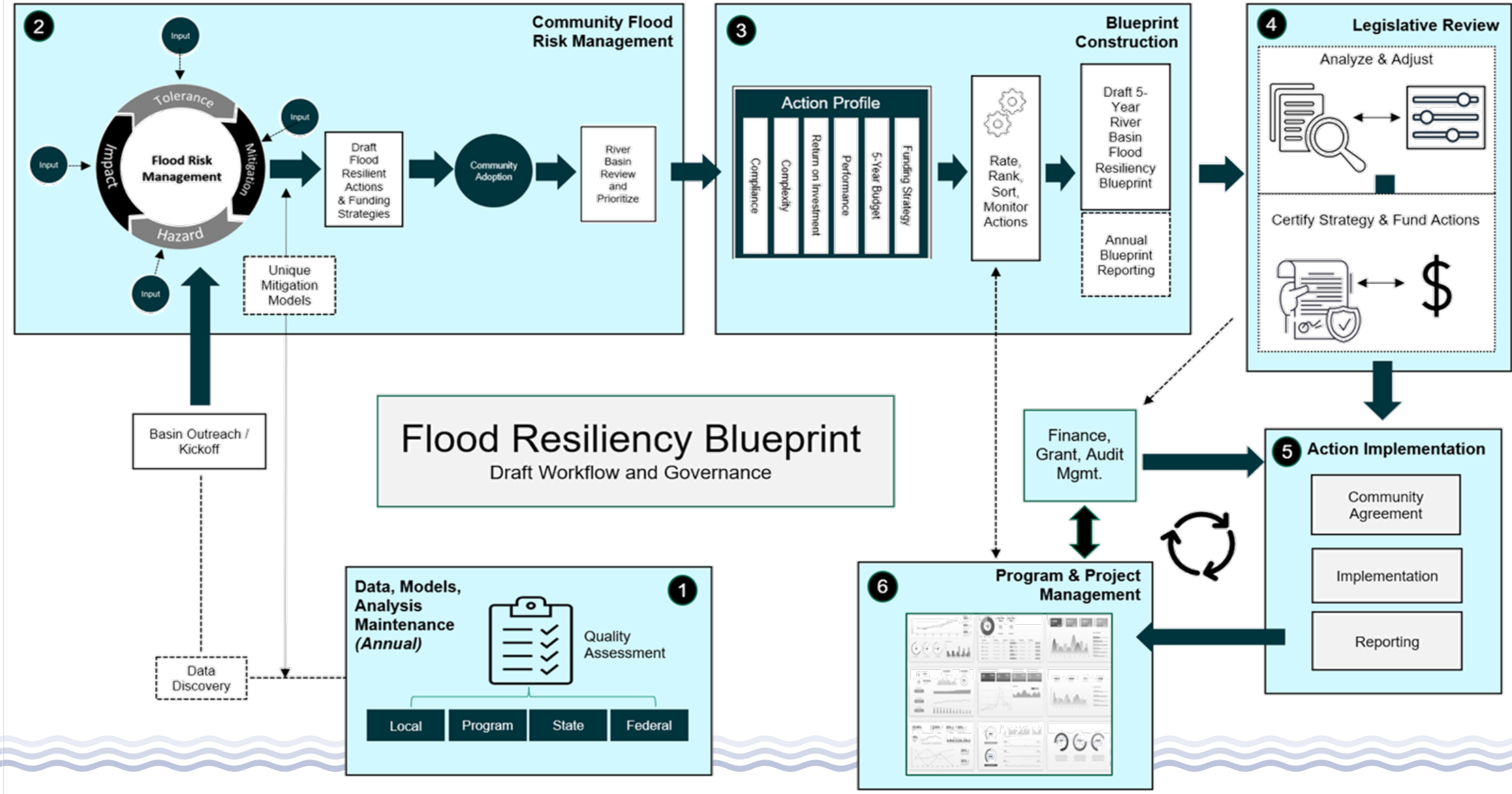
Progress on the Decision Support Tool has begun with:

- User Roles have been determined
- User workflows are being created for Storyboards
- Wireframes are being created

Deep Dive into Draft Governance Schema

Facilitator

DRAFT


2
Community Flood Risk Management
Input
Tolerance
Input
Input
Flood Risk Management
Impact
Mitigation
Hazard
Input
Draft Flood Resilient Actions & Funding Strategies
Community Adoption
River Basin Review and Prioritize
Unique Mitigation Models
3
Blueprint Construction
Action Profile
Compliance
Complexity
Return on Investment
Performance
5-Year Budget
Funding Strategy
Rate, Rank, Sort, Monitor Actions
Draft 5-Year River Basin Flood Resiliency Blueprint
Annual Blueprint Reporting
4
Legislative Review
Analyze & Adjust
Certify Strategy & Fund Actions
$
Basin Outreach / Kickoff
Flood Resiliency Blueprint
Draft Workflow and Governance
Finance, Grant, Audit Mgmt.
5
Action Implementation
Community Agreement
Implementation
Reporting
Data Discovery
Data, Models, Analysis Maintenance (Annual)
1
Quality Assessment
Local
Program
State
Federal
6
Program & Project Management

Governance

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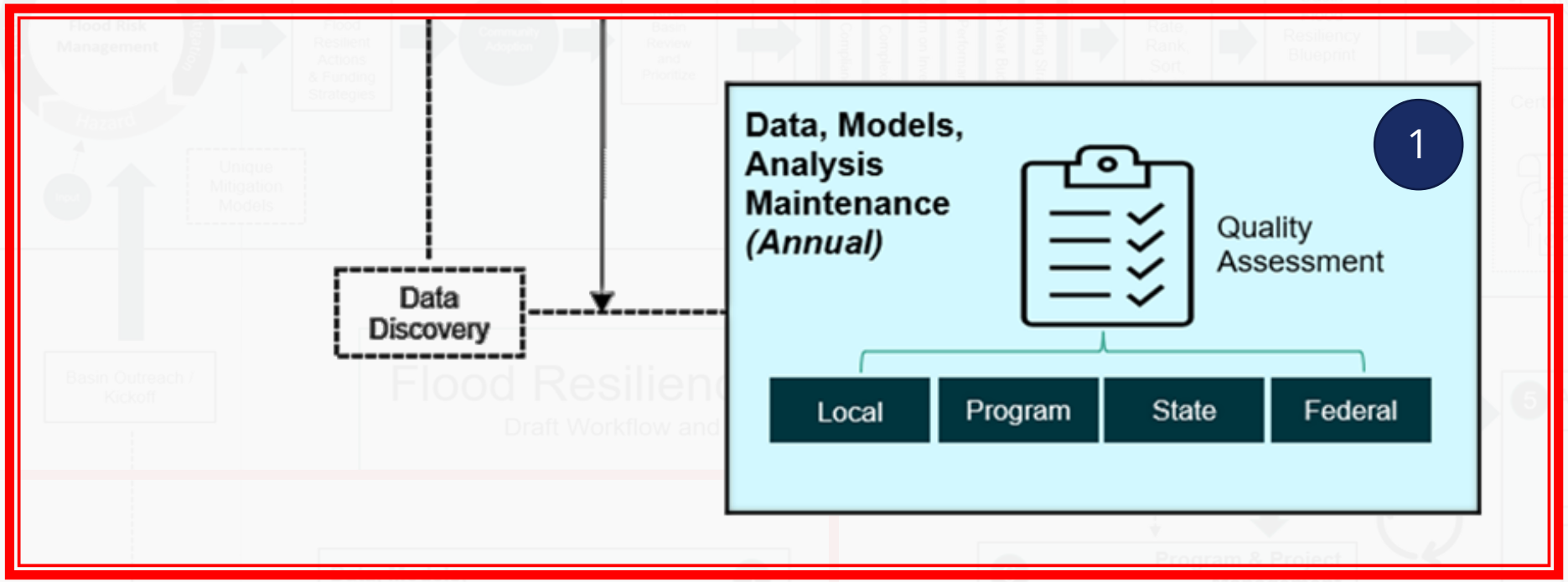

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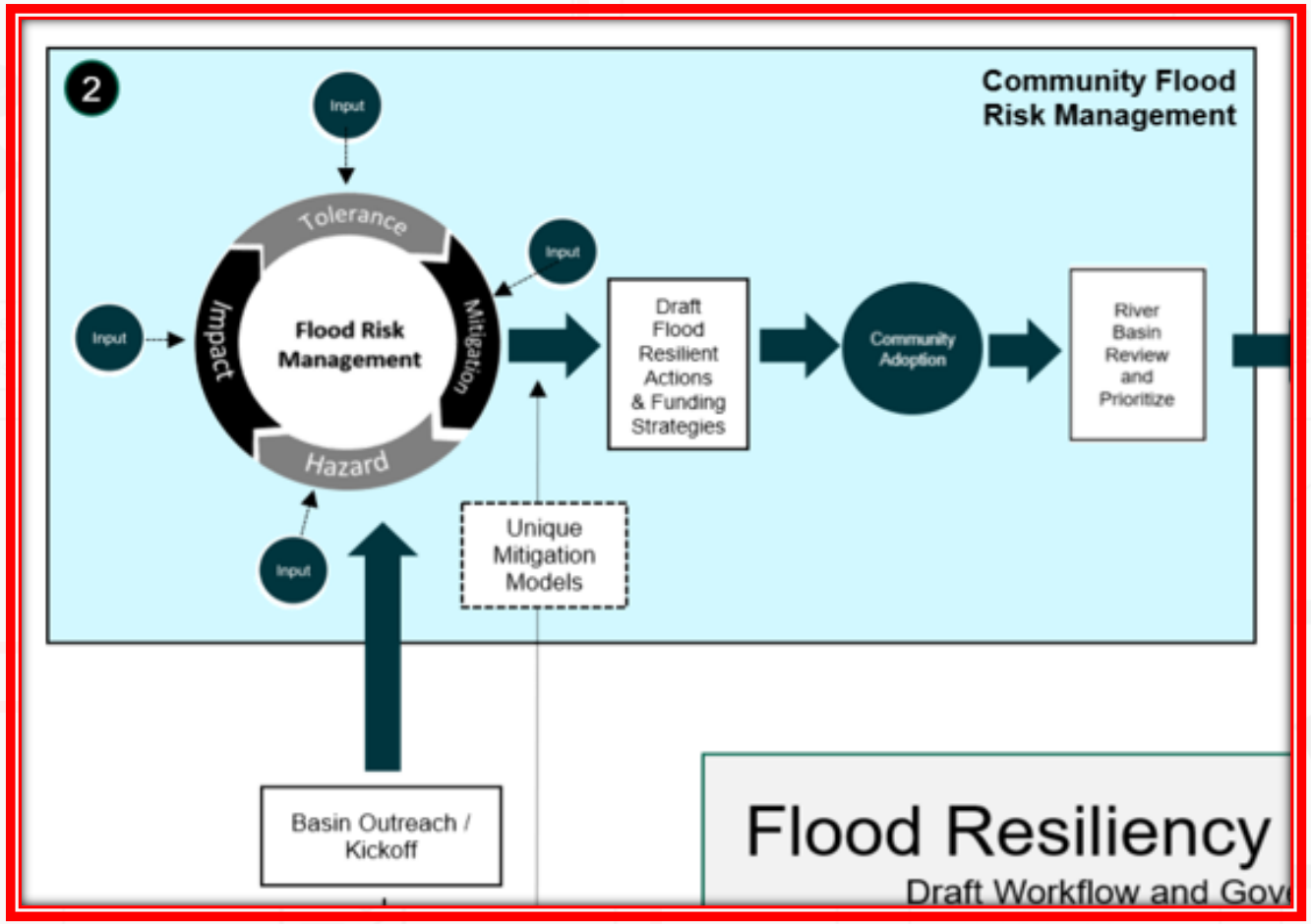
Governance



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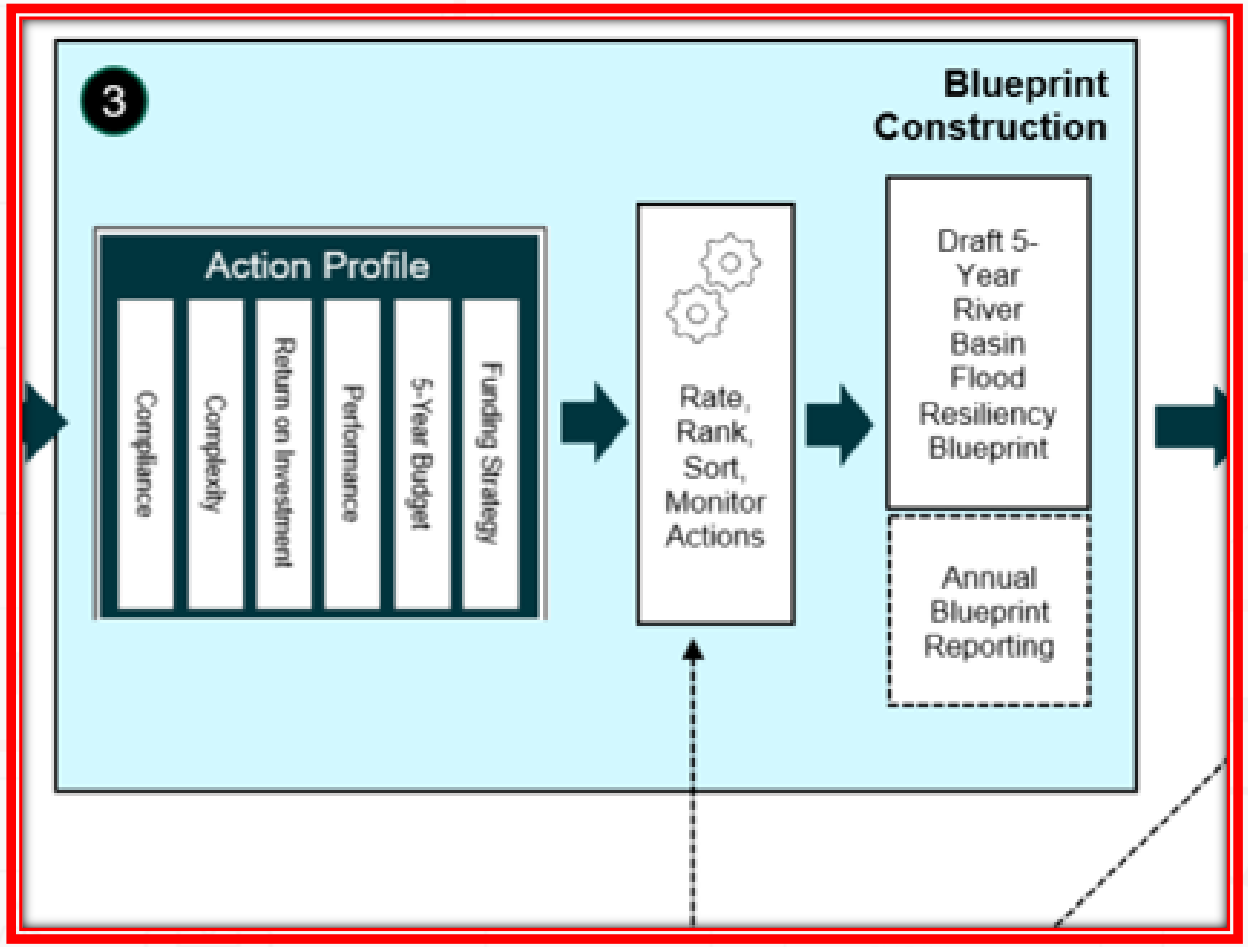

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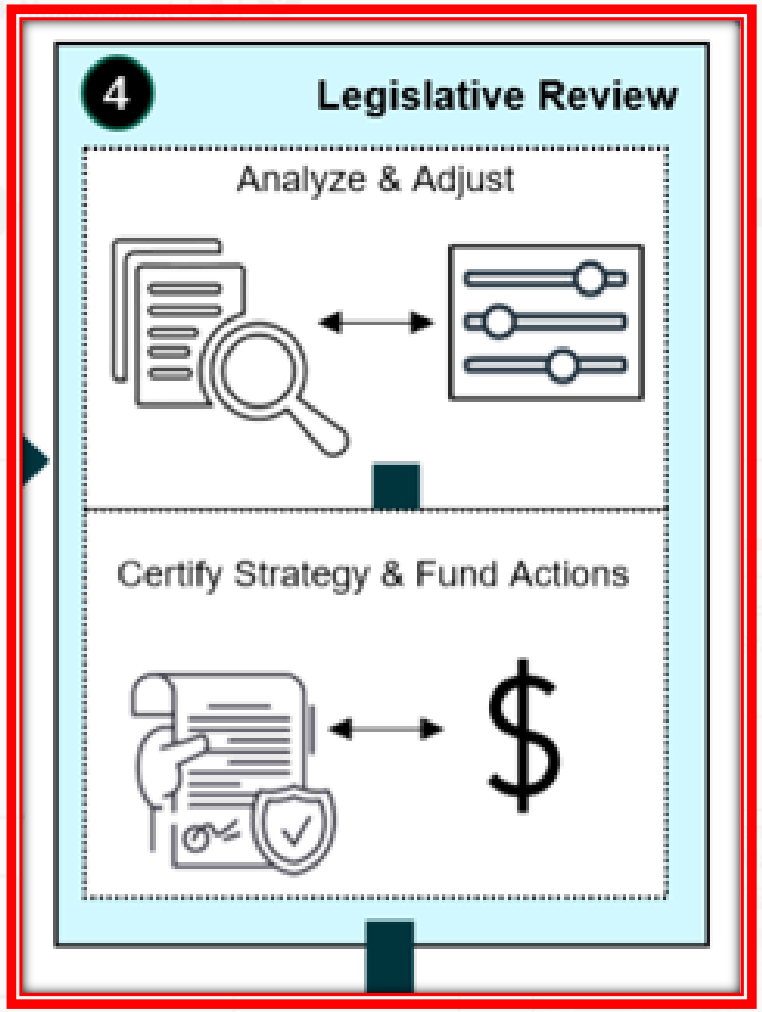

Governance

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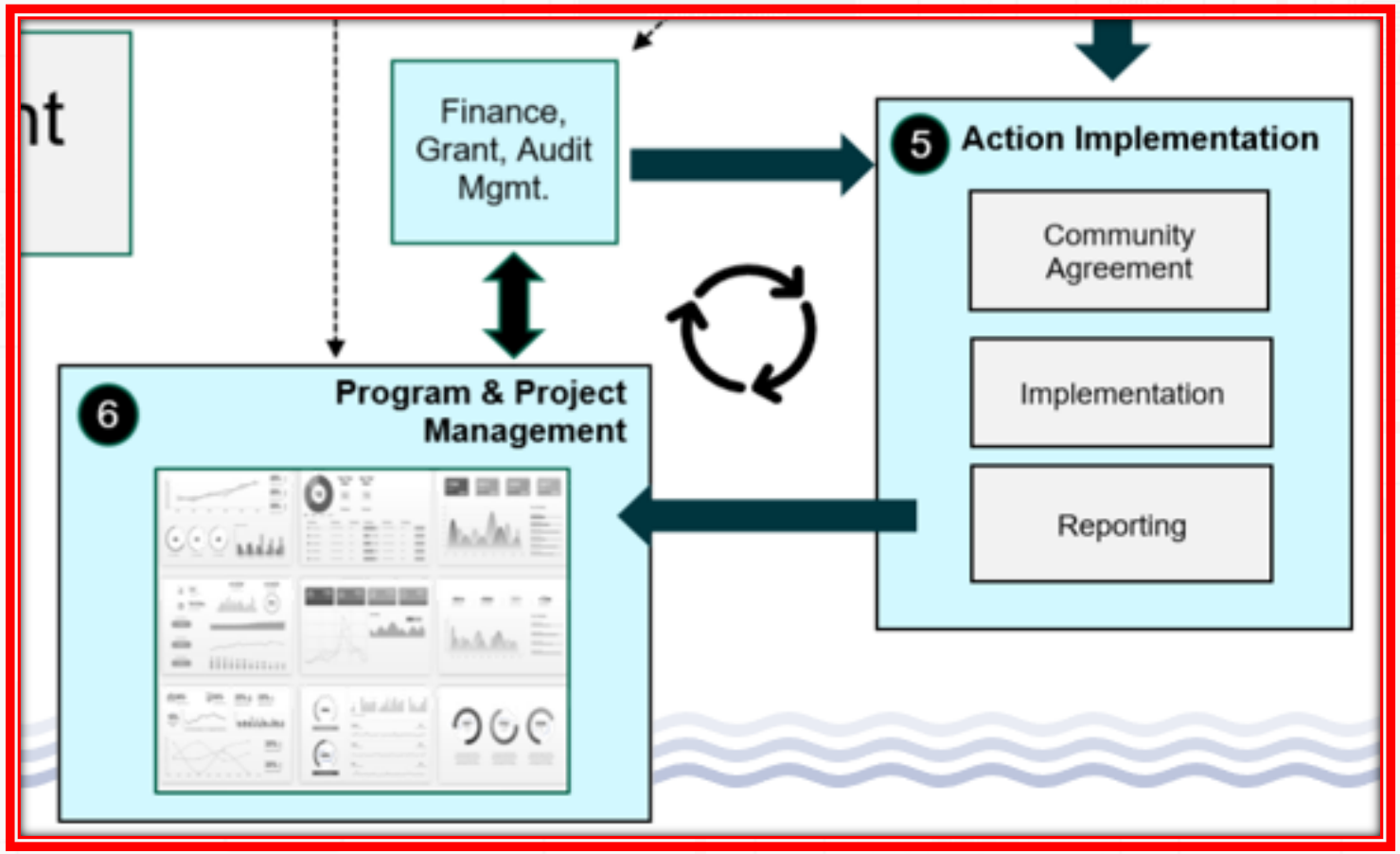

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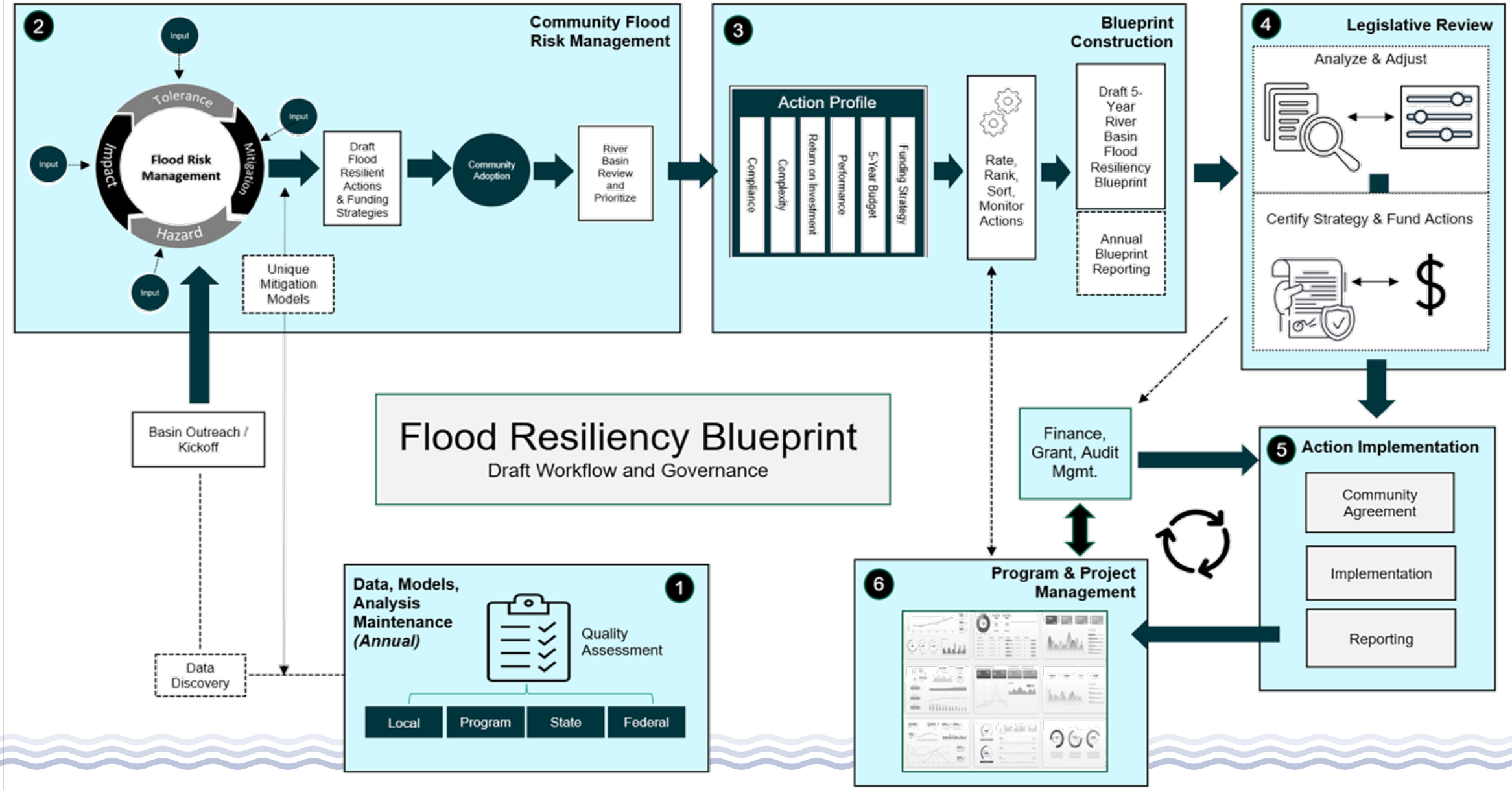
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Program
State
Federal
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Program & Project Management

Review of Task 3

Recommendations / Decision Framework

David Key

Recommendations / Decision Framework Deliverables

Deliverable	Name / Description	Summary / Examples
3.1, 3.2, 3.13 and 3.14	Develop, Implement and Maintain Multi-scale risk decision making tools & Recommendations for linking issues with solutions.	• Primary component of Decision Support tool. • Visualize Hazards through data • Ranges of Mitigations and Costs to Implement • Connections to Funding Opportunities
3.3	Recommendations for integrating and leveraging other State, Federal and Regional Resiliency Efforts	• Building on Task 1 (Stakeholder) and Task 2 (Gap Analysis) deliverables. • Peer State reviews and recommendations for NC Blueprint

Recommendations / Decision Framework Deliverables

Deliverable	Name / Description	Summary / Examples
3.4	Recommendations for incorporating local, regional and state values	• Allow for local values to guide metrics. • Variables for Local Values • Connecting Local values to Resilience Strategies (i.e. Equity)
3.5, 3.6 & 3.7	Recommendations for H&H modeling approaches, storm frequencies and climate forecast models	• What model software standards. • 1D vs 2D modeling • Fluvial, Pluvial • Annual Exceedance Probabilities • Future Conditions • Climate Change

Recommendations / Decision Framework Deliverables

Deliverable	Name / Description	Summary / Examples
3.8	Recommendations to address challenges identified in Tasks 1 and 2, including new technology, programs, and strategies.	• Example New Technolgies: Transition to 2D modeling • Example Programs: Pace of new Development, Statewide 2D modeling. • Example Strategies: Buyouts vs Community cohesion, Equity, Regional Solutions and potential adverse impacts
3.9 & 3.10	Recommendations for standardizing datasets and models (statewide) and are useful at the community and watershed scales to help close resource gap among communities. Effort and costs required to maintain the dataset usefulness	• Building Footprints / Values • Flood Risk "Score" Development • First Floor Elevations • Critical Infrastructure • Statewide Modeling / Pluvial Mapping • Stormwater Infrastructure Mapping • Equity / SOVI / LMI Datasets

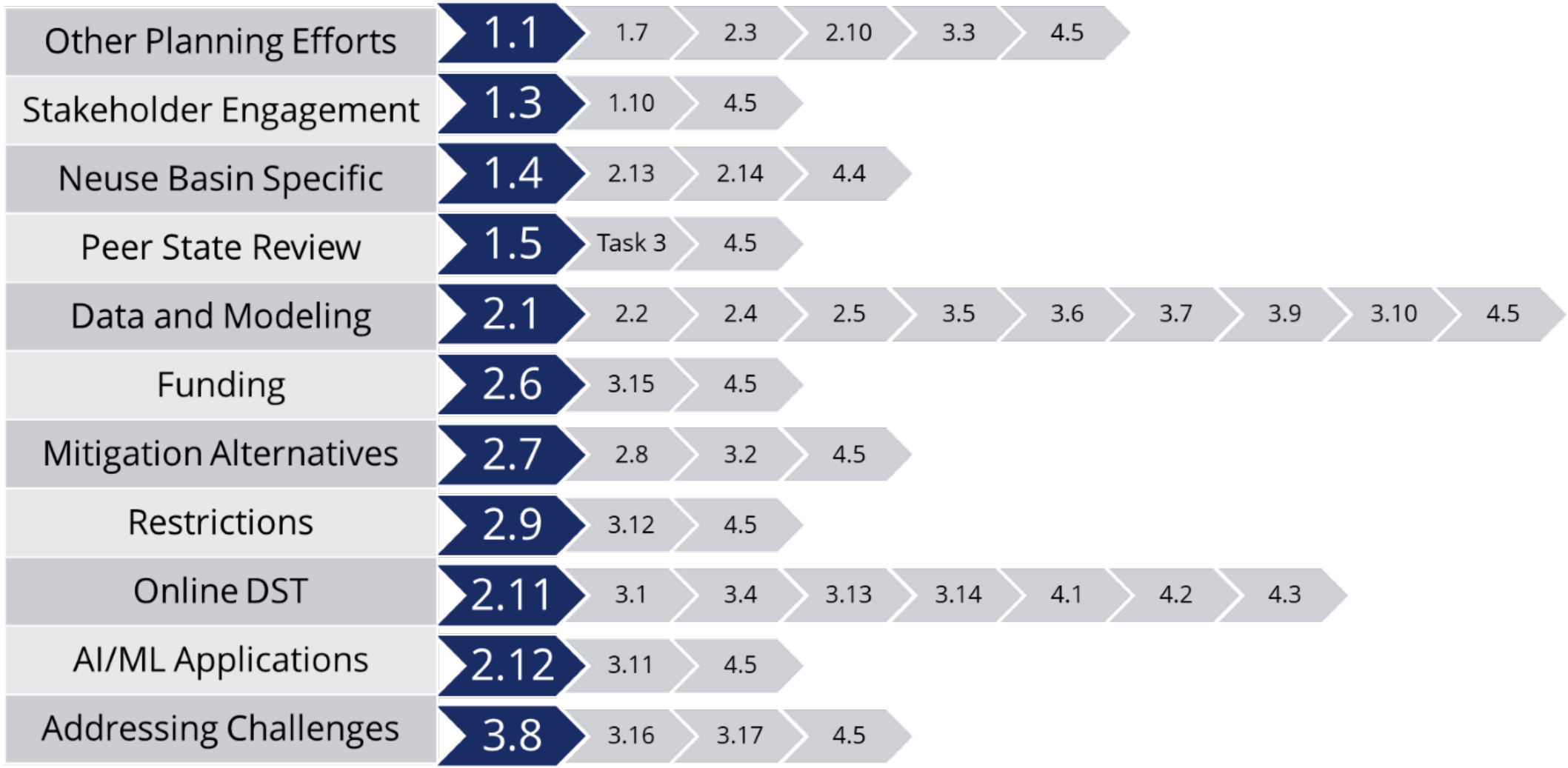
Recommendations / Decision Framework Deliverables

Deliverable	Name / Description	Summary / Examples
3.11	Recommendations on the utilization of Artificial Intelligence/Machine learning to inform the development and maintenance of the Blueprint	• Follow up of Gap Analysis report on AI/ML
3.12	Recommendations for state-level staffing and support; recommendations for regional communication	• Governance • Providing Support and Capacity at Local Levels
3.13	Recommendations for administering the online decision-making tool to meet the goals of the Blueprint	• Discuss data and maintenance needs • Leverage existing enterprise datasets via API • Minimize Data duplication • Users, Roles • Document Management System

Recommendations / Decision Framework Deliverables

Deliverable	Name / Description	Summary / Examples
3.15	Recommendations for developing and maintaining local stormwater maintenance programs. Include the level of resources required to maintain these programs, possible funding sources, and ways to address the funding gaps of small, under-resourced communities.	• Local Governments lacking in resources to manage maintenance.
3.16	Documentation of lessons learned to date.	

Subtask Flow Paths



Subtask Progress

Subtask working

Other Planning Efforts	1.1	1.7	2.3	2.10	3.3				
Stakeholder Engagement	1.3	1.10							
Neuse Basin Specific	1.4	2.13	2.14	4.4					
Peer State Review	1.5								
Data and Modeling	2.1	2.2	2.4	2.5	3.5	3.6	3.7	3.9	3.10
Funding	2.6	3.15							
Mitigation Alternatives	2.7	2.8	3.2						
Restrictions	2.9	3.12							
Online DST	2.11	3.1	3.4	3.13	3.14	4.1	4.2	4.3	
AI/ML Applications	2.12	3.11							
Addressing Challenges	3.8	3.16	3.17						
Final DRAFT Blueprint	4.5								

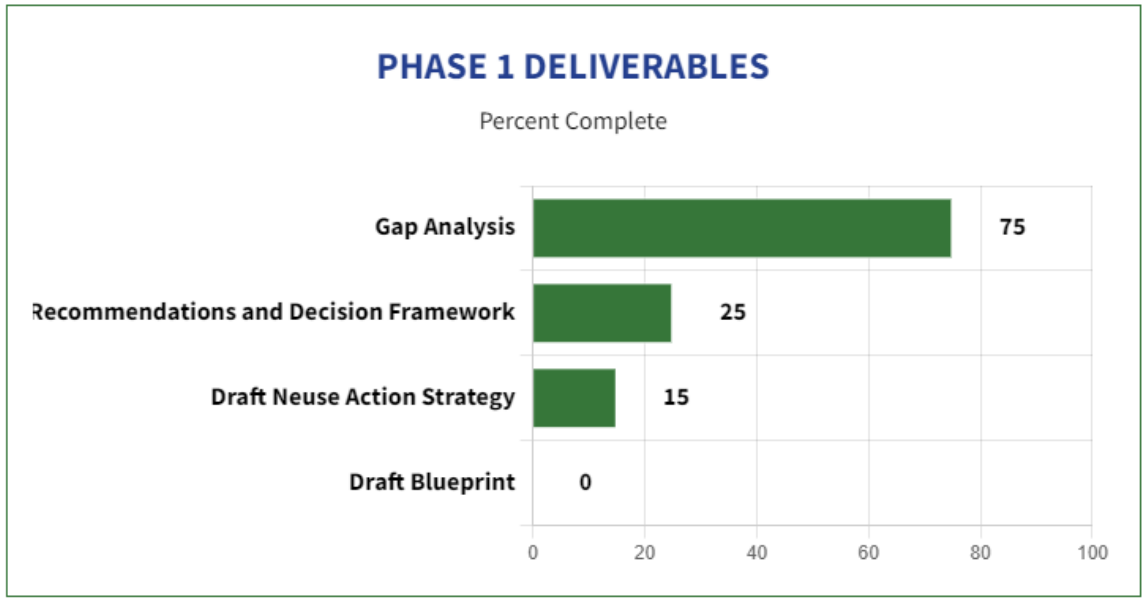
	Not Started/Needs Significant Work
	Started
	DEQ Review/Revisions
	TAG Review Closed
	Complete

Tracking

PHASE 1
Develop Draft Blueprint
January 2023 - December 2023
In Progress

PHASE 2
Develop Decision Support Tool
June 2023 - December 2023
Not Started

PHASE 3
Apply To Basins Statewide
Dates Pending
Not Started



Gap Analysis

Statewide inventory and gap analysis of resources and data necessary to develop the Blueprint and action strategies. The Gap Analysis will identify and analyze factors that prevent resources from working together/spatial disconnects. Each factor will be summarized based on best available data and models.

Recommendations and Decision Framework

Draft Neuse Action Strategy

Draft Blueprint

Next Steps

- Deliverables for Task 2
- Deliverables for Task 3

- Principal meeting on July 18th
- TAG meeting in person July 25th

Open Discussion