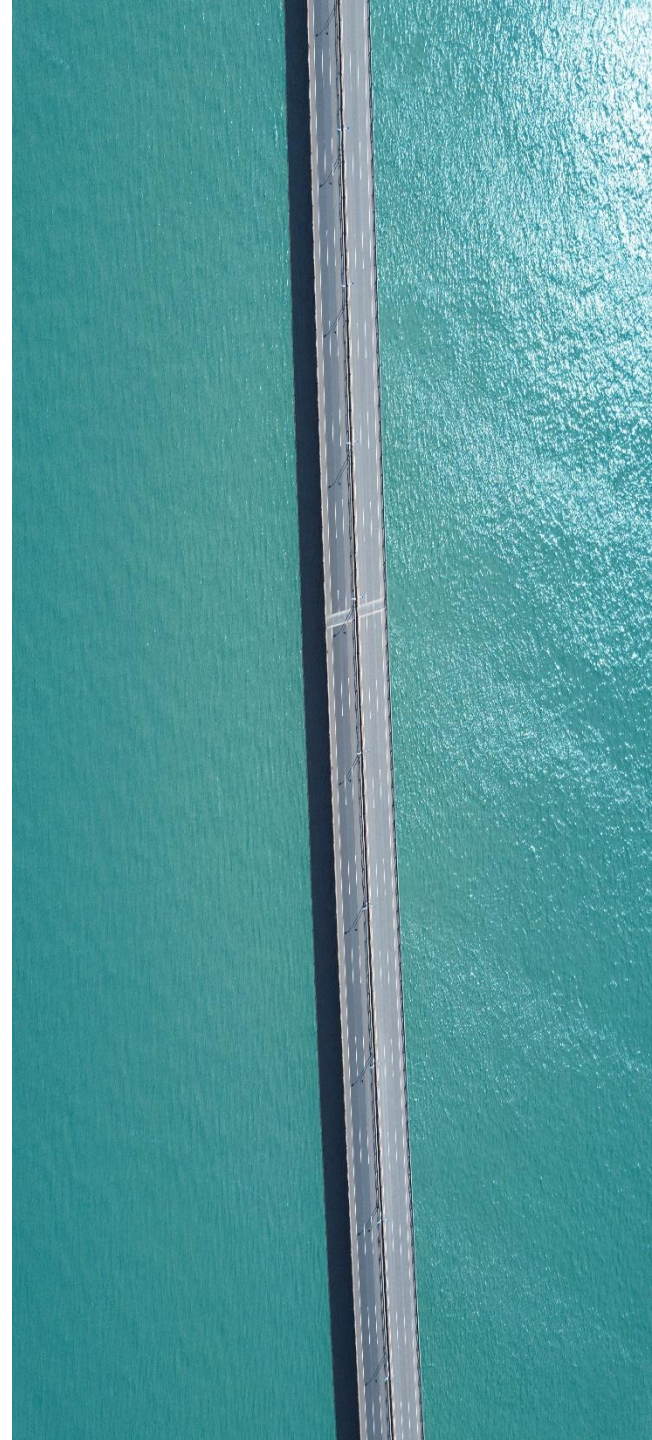


An aerial photograph of a coastal area. At the top, a row of houses with blue roofs and swimming pools is visible. Below the houses is a line of trees with autumn-colored foliage. A sandy beach runs horizontally across the middle of the image. In the foreground, the ocean with white-capped waves is visible. The text 'Outer Banks Regional Hazard Mitigation Plan Update' is overlaid in large white letters on the beach and ocean area.

Outer Banks Regional Hazard Mitigation Plan Update

Hazard Mitigation Planning Committee
Meeting 3 – October 21 & 22, 2024

Agenda



Welcome!

- Reminder to sign in
 - *Online attendees – write your name, title, and department/agency in the chat*

WSP Team & Contact Info

Project Manager: David Stroud – david.stroud@wsp.com

Planners: Abby Moore – abigail.moore@wsp.com

Ranger Ruffins – ranger.ruffins@wsp.com

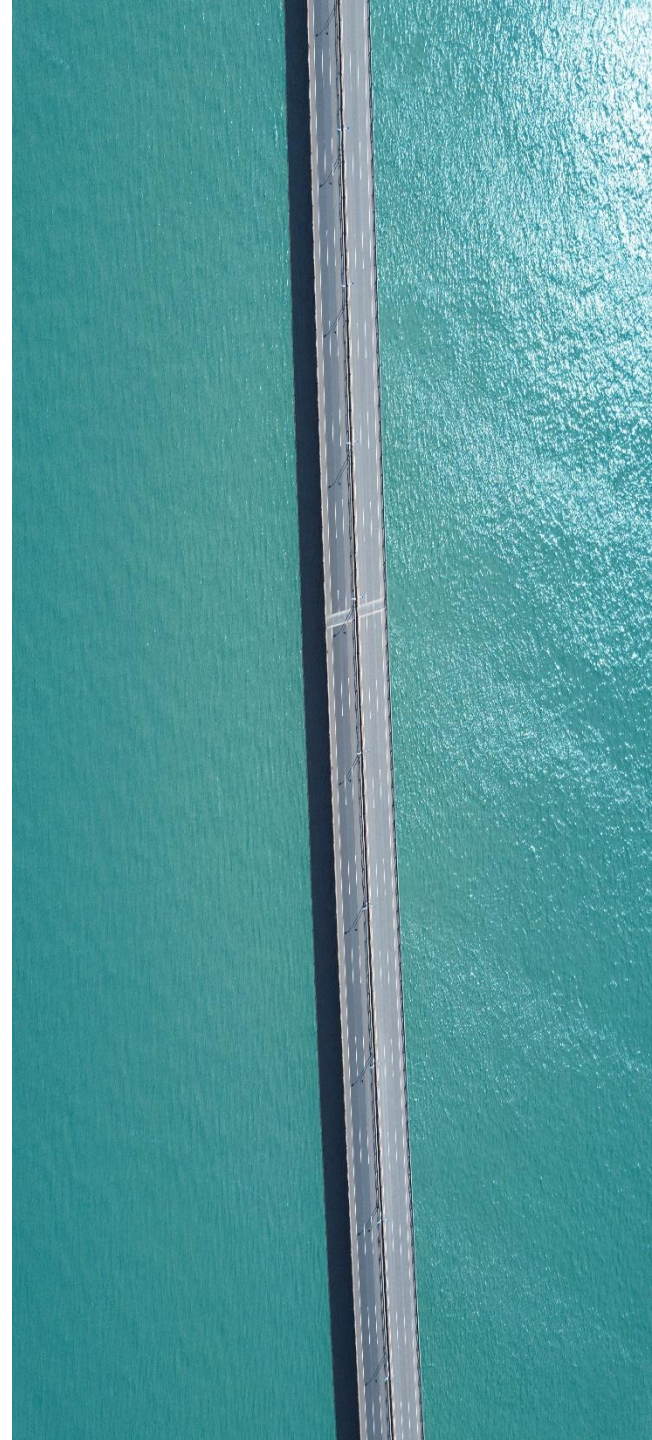
Kimmy Hansen – kimberly.hansen@wsp.com

Agenda

- Project Overview & Where we are in the planning process
- Capability Assessment
 - New Capabilities
 - Substantial Damage Estimate Procedures
- Mitigation Strategy
 - Review Goals & Objectives
 - Mitigation Action Updates
- Discussion
- Next Steps



Project Overview



Four-Phase Planning Process



Get Organized

Convene a committee, involve the public, and coordinate

Assess Risks

Identify hazards and evaluate the problems

Develop a Mitigation Strategy

Set goals, review actions, and draft an action plan

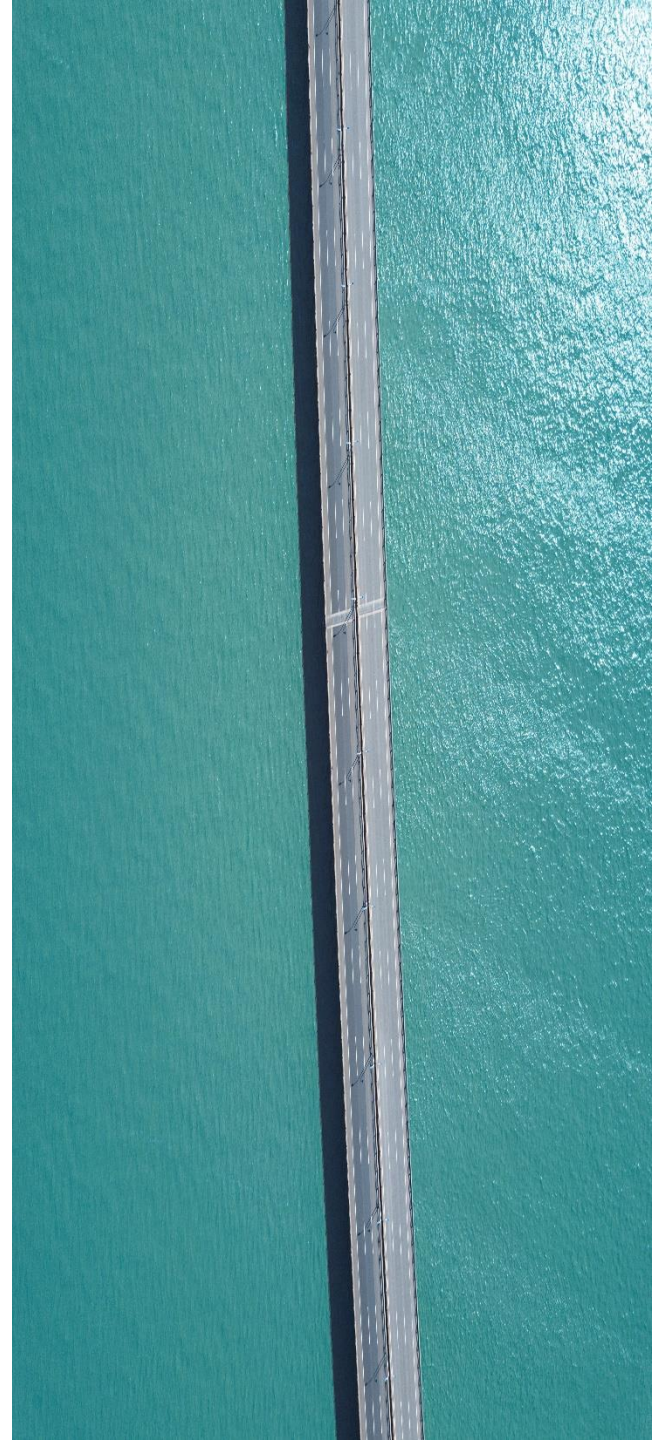
Plan Maintenance

Implement, evaluate, and revise the plan

Scope

Step 1	Organize to Prepare the Plan
Step 2	Involve the Public
Step 3	Coordinate
Step 4	Assess the Hazard
Step 5	Assess the Problem
Step 6	Set Goals
Step 7	Review Possible Activities
Step 8	Draft an Action Plan
Step 9	Adopt the Plan
Step 10	Implement, Evaluate, & Revise the Plan

Capability Assessment



Capability Assessment

What is Capability?

- Measures local resources and tools available to support or implement mitigation projects
- Identifies gaps, conflicts, and opportunities in existing local plans, policies, programs, etc.
- Identifies mitigation measures already in place or underway

Capability Indicators:

- Plans and Regulatory – plans, programs, ordinances
- Administrative & Technical – staff, training, expertise
- Fiscal Resources – bonds, fees, taxes, CIP, grants
- Education and Resources – engaged stakeholders, public outreach, warning & notification
- Mitigation Resources – grants, past mitigation projects performance
- Political Will – public and leadership support for mitigation, investments, regulation enforcement

Previous Capability Self-Assessment Results

Jurisdiction	Plans, Ordinances, Codes and Programs	Administrative and Technical	Fiscal	Education and Outreach	Mitigation	Political	Overall
Currituck County	High	High	High	Moderate	Moderate	Moderate	High
Dare County	High	High	High	High	High	High	High
Duck	High	Moderate	Moderate	High	Limited	Moderate	Moderate
Kill Devil Hills	High	High	Moderate	High	Limited	Moderate	Moderate
Kitty Hawk	Moderate	Limited	Moderate	Limited	Moderate	Moderate	Moderate
Manteo	Moderate	Moderate	Moderate	Limited	Limited	Moderate	Moderate
Nags Head	High	High	High	High	High	High	High
Southern Shores	High	High	High	High	High	High	High

Changes Since the Last Plan Update

What are we missing?

Largest Change: Planning and Regulatory

- All communities completed Comprehensive/Land Use Plan updates
- Flood Damage Prevention Ordinance Updates; minimum elevation requirements
- RCCP Resilience Strategies: Currituck County, Dare County, Duck, Nags Head, Kitty Hawk
- Albemarle Regional Resilience Portfolio

Other New Resources:

- Joint Hazardous Material Commodity Flow Study
- NC 12 Task Force & Report
- Interagency Work Group for threatened oceanfront structures
- Nags Head Vulnerability, Consequences, Adaptation, Planning Scenarios (VCAPS) Report
- Southern Shores full time Building Inspector

New FEMA Requirement: Substantial Damage Estimate Procedures

The plan must include information on how participating communities use the NFIP to reduce risk after a disaster through substantial damage and substantial improvement (SD/SI) procedures

- Which agency or person makes SD/SI determinations?
- Are staff trained to make SD/SI determinations? Are there enough staff to complete SD/SI determinations?
- What process does the community use to make SD/SI determinations?
- How are SD/SI requirements communicated pre- and post-event?

Capability vs. Mitigation

Example: “Continue enforcement of the Flood Damage Prevention Ordinance”

- Should the ordinance be revised to incorporate new policies that reduce risk?
- Are more enforcement capabilities needed?

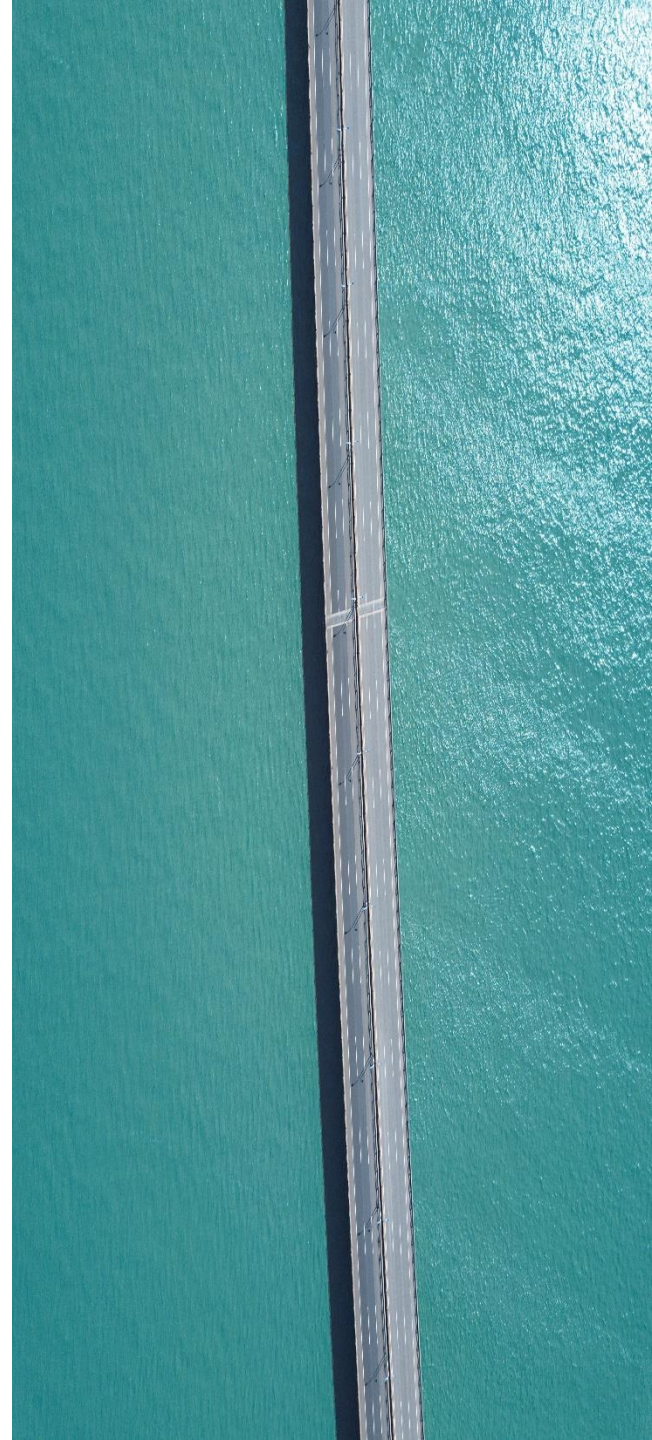
Example: “Seek funding for public hazard mitigation projects.”

- Are there specific projects that require outside funding?
- Are additional grant writing capabilities needed?

Example: “Annual Review of Emergency Operations Plan”

- Would this be completed even if it wasn’t part of the HMP action plan?

Mitigation Strategy



Mitigation Strategy

What?

- Development, prioritization, and implementation of feasible measures to prevent, prepare for, respond to, and recover from hazard events

Why?

- Reduce vulnerability and mitigate the impact of hazards on communities
- Prioritize actions and allocate resources effectively
- Collaborate with stakeholders, heighten awareness, and build capacity for continued hazard mitigation efforts

Reduce the impact
of hazards on
**existing
development**
+
Ensure **future
development**
occurs in a way
that minimizes
vulnerability

Goals & Objectives

Goal 1: Reduce the risk of loss of life and personal injury from hazards.

- **Objective 1-1:** Educate citizens to encourage individual responsibility to protect themselves and their families from hazards.
- **Objective 1-2:** Reduce the risk and impact of future hazards by mitigating risk of development in both known hazard areas and areas expected to face future hazard risk.

Goal 2: Maintain critical facilities and infrastructure and protect them from damage.

- **Objective 2-1:** Retrofit or otherwise protect critical facilities and infrastructure.
- **Objective 2-2:** Increase redundancy of critical systems and services.

Goals & Objectives

Goal 3: Ensure that hazard mitigation practices, construction techniques, policies, and ordinances are integrated for both new development and post-disaster development to enhance resiliency and enable speedy recovery.

- **Objective 3-1:** Adopt protective development standards and establish post-disaster redevelopment policies.
- **Objective 3-2:** Preserve and protect natural and beneficial floodplain functions and key natural resources.
- **Objective 3-3:** Explore, develop, and implement new pre-disaster opportunities that build community resilience.

Goal 4: Improve inter-jurisdictional cooperation and coordination, especially regarding the reduction of hazard impacts.

- **Objective 4-1:** Coordinate development standards across jurisdictions.
- **Objective 4-2:** Encourage and enable inter-jurisdictional communication.

Mitigation Action Requirements

FEMA requirement: At least one action for each identified hazard

CRS credit: Maximize by including flood-related actions in each of the six mitigation categories:

1. **Prevention** (land development plans & zoning, freeboard requirements)
2. **Property Protection** (acquisition, elevation, floodproofing, backup generators)
3. **Structural Projects** (floodwalls, stormwater improvements, harden critical infrastructure)
4. **Emergency Services** (warning systems, response capacity & capability improvements)
5. **Natural Resource Protection** (dune or wetland restoration, vegetative management, open space preservation)
6. **Public Education** (mailings, websites, social media campaigns, interactive map tools, hazard disclosure requirements, targeted outreach and engagement)

Current Action Plans

includes status
updates received
to date

Actions by Mitigation Category

	Prevention	Property Protection	Natural Resource Protection	Structural Projects	Emergency Services	Public Education
Currituck County	4	3	6	3	3	15
Dare County	5	6	3	6	4	7
Duck	9	2	4	3	4	9
Kill Devil Hills	9	3	4	1	3	9
Kitty Hawk	2	3	2	1	4	3
Manteo	2	3	3	8	5	2
Nags Head	9	3	2	2	1	3
Southern Shores	12	2	2	2	3	3

Current Action Plans

includes status
updates received
to date

Actions by Hazard Addressed

	All Hazards	Drought	Earthquake	Excessive Heat	Flood	Hurricanes & Coastal Hazards	Tornadoes & T-storm	Severe Winter Storm	Wildfire
Currituck County	✓				✓	✓	✓		✓
Dare County	✓	✓		✓	✓	✓	✓	✓	✓
Duck	✓				✓	✓	✓		✓
Kill Devil Hills	✓			✓	✓	✓	✓	✓	✓
Kitty Hawk	✓				✓	✓	✓		
Manteo	✓	✓			✓	✓	✓	✓	
Nags Head	✓				✓	✓	✓		✓
Southern Shores	✓	✓		✓	✓	✓	✓		✓

HIRA Recap: PRI Summary Results

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Drought	Possible	Minor	Large	More than 24 hrs	More than 1 week	2.2
Earthquake	Unlikely	Minor	Large	Less than 6 hrs	Less than 6 hrs	1.9
Excessive Heat	Highly Likely	Limited	Large	More than 24 hrs	Less than 1 week	3.0
Flood	Highly Likely	Critical	Large	6 to 12 hours	Less than 1 week	3.5
Hurricane & Coastal Hazards	Likely	Catastrophic	Large	More than 24 hrs	Less than 1 week	3.3
Tornadoes & Thunderstorms	Highly Likely	Limited	Moderate	Less than 6 hrs	Less than 6 hrs	2.9
Severe Winter Storm	Highly Likely	Minor	Large	More than 24 hrs	Less than 1 week	2.7
Wildfire	Possible	Limited	Moderate	Less than 6 hrs	Less than 1 week	2.5
Hazardous Materials Incident	Likely	Minor	Negligible	Less than 6 hrs	Less than 24 hrs	2.0
Radiological Emergency	Unlikely	Limited	Negligible	Less than 6 hrs	More than 1 week	1.9
Cyber Attack	Possible	Critical	Small	Less than 6 hrs	More than 1 week	2.7
Terrorism	Unlikely	Catastrophic	Small	Less than 6 hrs	More than 1 week	2.7
Transportation Infrastructure Failure	Possible	Critical	Small	Less than 6 hrs	More than 1 week	2.7

PRI Summary Results

High Risk (≥ 3.0)	Flood Hurricane & Coastal Hazards Excessive Heat
Moderate Risk (2.0 – 2.9)	Tornadoes & Thunderstorms Severe Winter Storm Terrorism Transportation Infrastructure Failure Wildfire Drought Cyber Attack Hazardous Materials Incident
Low Risk (< 2.0)	Earthquake Radiological Emergency

Consider
additional
actions for high
priority hazards

New Mitigation Action Ideas

Excessive Heat:

- Strengthen and increase redundancy to protect critical utility infrastructure from power outages
- Coordinate with social service providers to ensure that emergency shelters are available during extreme heat events
- Develop heat emergency response procedures
- Increase shade in parking lots and public spaces
- Install public cooling stations, misting stations, and water fountains in public spaces
- Conduct outreach campaigns to raise awareness about heat-related risks

New Mitigation Action Ideas

Flooding and Sea Level Rise:

- Protect existing structures through elevation or acquisition.
- Increase storm drainage capacity
- Decrease impervious surface; install low impact development techniques
- Evaluate options for septic system replacement

New Mitigation Action Ideas

High Winds, Hurricane, Thunderstorms:

- Retrofit facilities to withstand high winds
- Protect power lines and traffic signs
- Strengthen building codes
- Bury distribution lines

New Mitigation Action Ideas

Other Hazards / All Hazards:

- Remove existing structures from high hazard areas prone to flood or erosion
- Create agreements with AirBnB and other home share platforms to educate guests on beach hazards
- Implement shoreline restoration projects, including beach nourishment, dune protection, dune vegetation, sand fencing, and living shorelines

New Mitigation Action Ideas

Plan Integration Opportunities

Look to incorporate actions from:

- Comprehensive Plans
- Capital Improvement Plans
- RCCP Resilience Strategy Project Portfolios
- [Albemarle Regional Resilience Portfolio](#)

Other Resources:

- [NC Resilience Exchange Actions Database](#)
- [FEMA Mitigation Ideas](#)

Next Steps

Public Survey Updates

475 responses

Please rank these categories by how important you think each one is for your community to consider pursuing.

[More Details](#)

Prevention,
Emergency
Services, and
Natural Resource
Protection are
most favored

1 - Most Important 2 3 4 5 6 - Least Important

Prevention

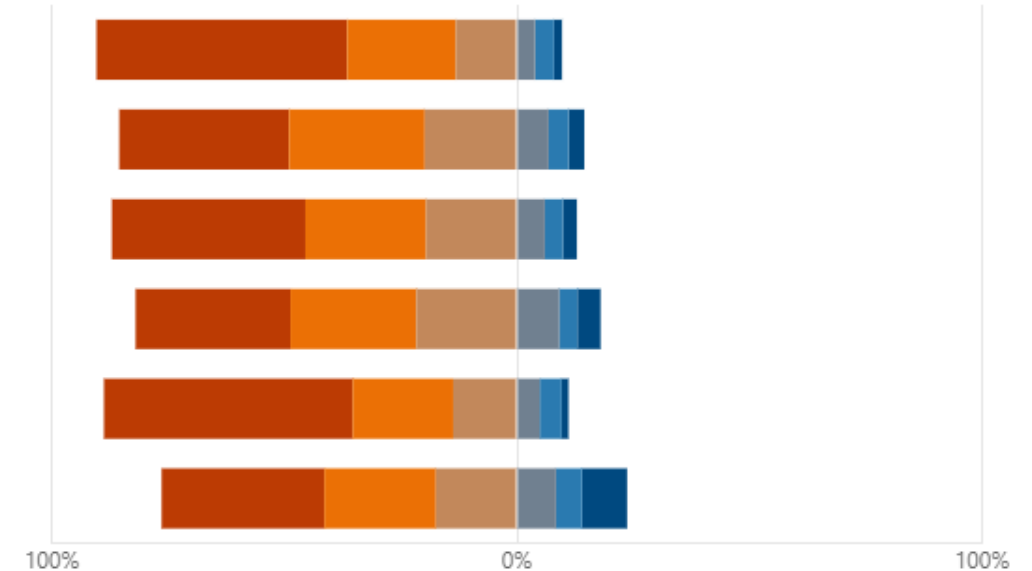
Property Protection

Natural Resource Protection

Structural Projects

Emergency Services

Public Education



[Next Steps](#)

Public Survey Updates

Frequently recommended actions include drainage improvements, evacuation improvements, and beach nourishment

12. What are some steps your local government could take to reduce the risk of future hazard damages in your neighborhood?

[More Details](#)[Insights](#)

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Responses

Latest Responses

"Assist in formal recommendations for water floods."

"Strongly support the building of the Currituck bridge!"

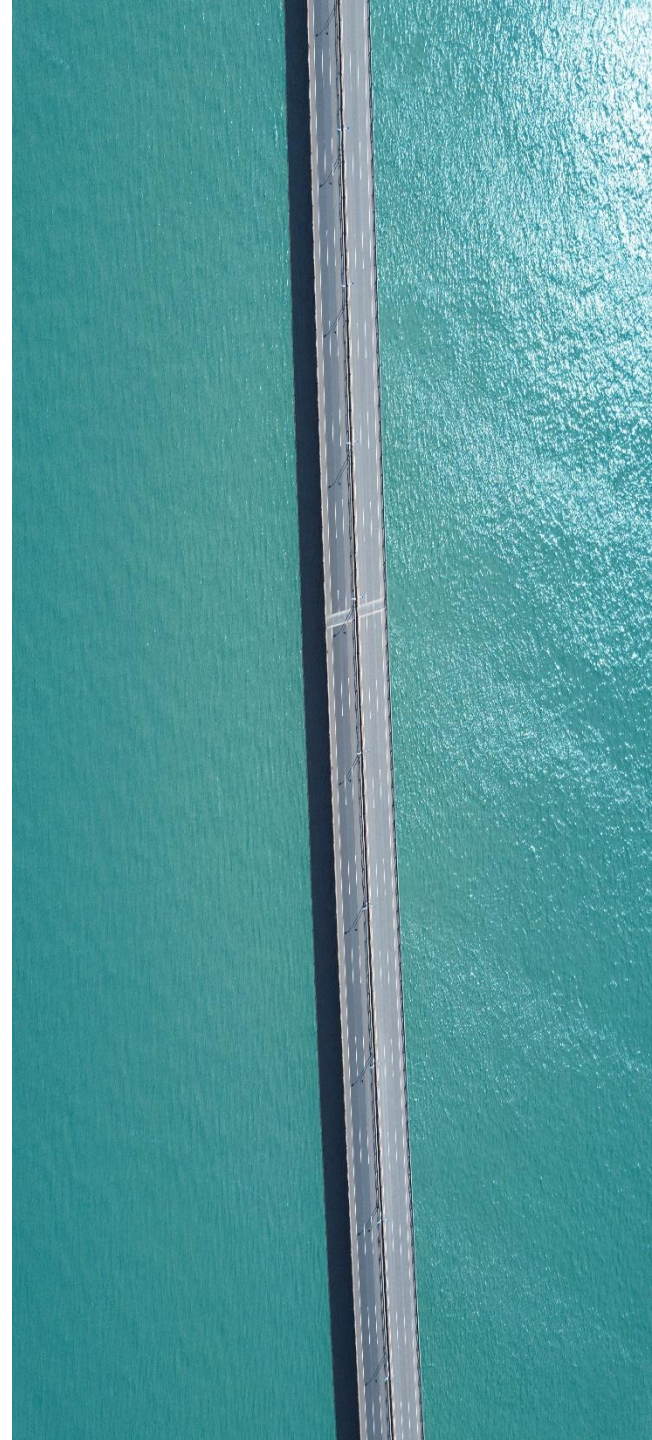
"Build the Currituck bridge!"

49 respondents (15%) answered **drainage** for this question.

Word cloud showing responses related to drainage and flood mitigation:

- drainage
- road
- Currituck bridge
- building a bridge
- stop building
- Better drainage
- drainage ditches
- drainage system
- Beach or dune
- beach nourishment
- storm water
- flooding
- water drainage
- Currituck County
- beach replenishment
- beach road
- areas
- homes
- properties
- flood

Next Steps





Key Milestones and Meetings

April

Initial HMPC and public meetings
– Project Kickoff

August

Risk Assessment draft HMPC meeting
Additional public meetings

October

Mitigation Strategy HMPC meetings

December

Final HMPC and public meetings for draft
Plan Review; Proposed delivery of draft plan

June 2025

Existing plan expiration

Next Steps

What's Next

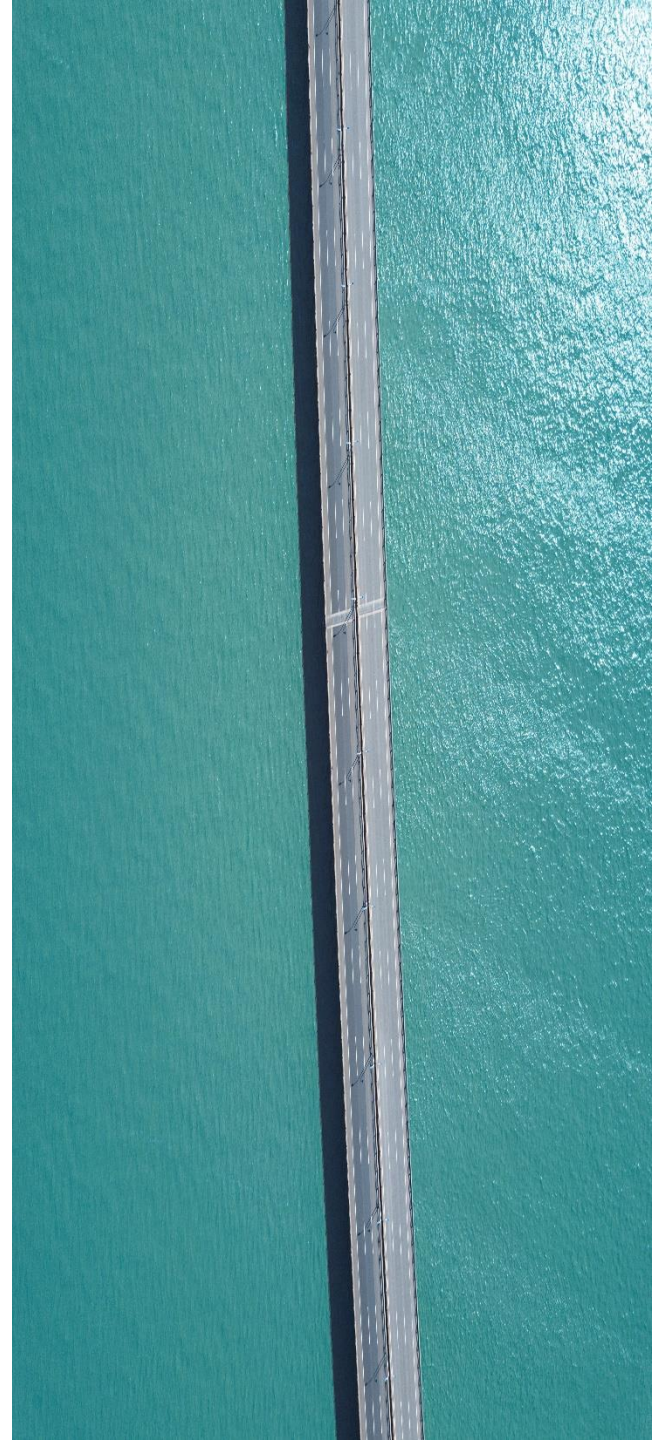
HMPC Action Items:

- Send mitigation action status updates and new mitigation actions to Abby (abigail.moore@wsp.com)

WSP Action Items:

- Provide draft plan for committee and public review – December
- Schedule final HMPC & public meetings for December

Questions?





Thank you



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