

DAVID, MEET GOLIATH:

HOW SMALL COMMUNITIES ARE FACING DOWN
BIG FLOOD ISSUES

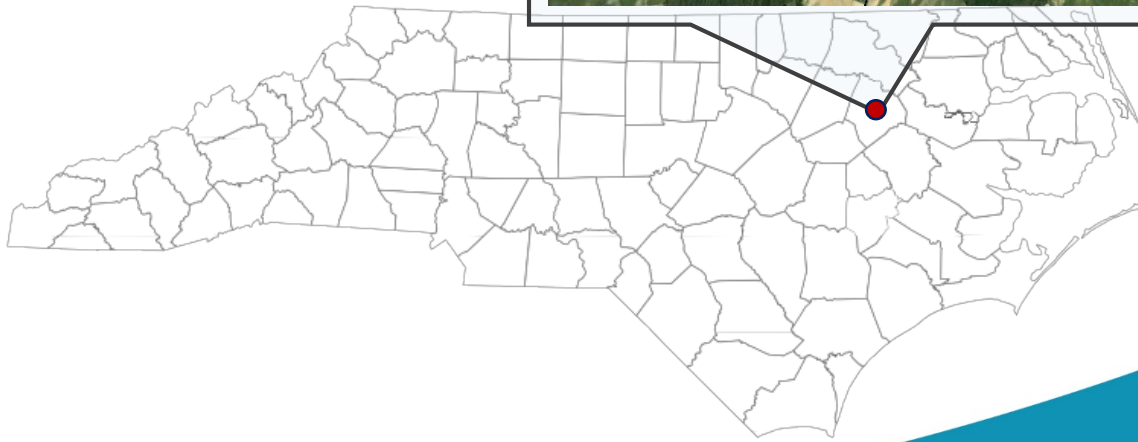
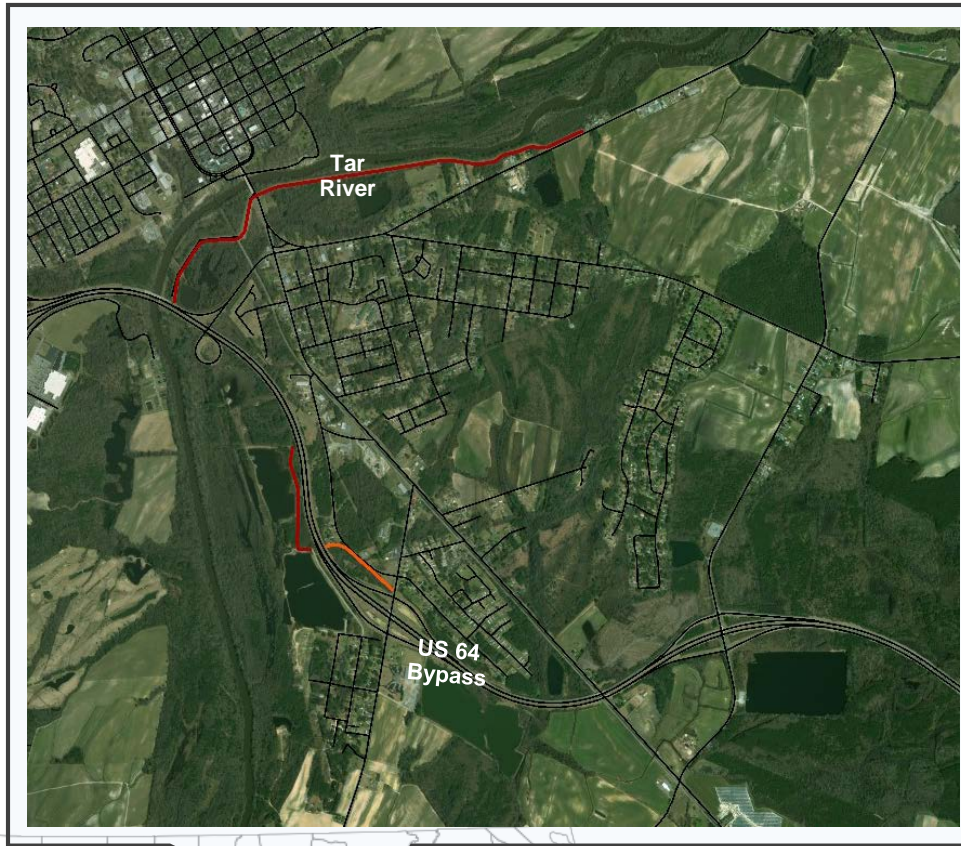


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WHAT IS RESILIENCE?

- ➡ Looking forward and applying resilient design for an uncertain future
- ➡ Developing creative, responsible and practical solutions for communities, the built environment and the natural environment that allow for their continued use under evolving conditions and rapidly increasing risks
- ➡ The ability of a community or a system to withstand, respond and recover from sudden shocks, regardless of chronic stressors and risk accelerators

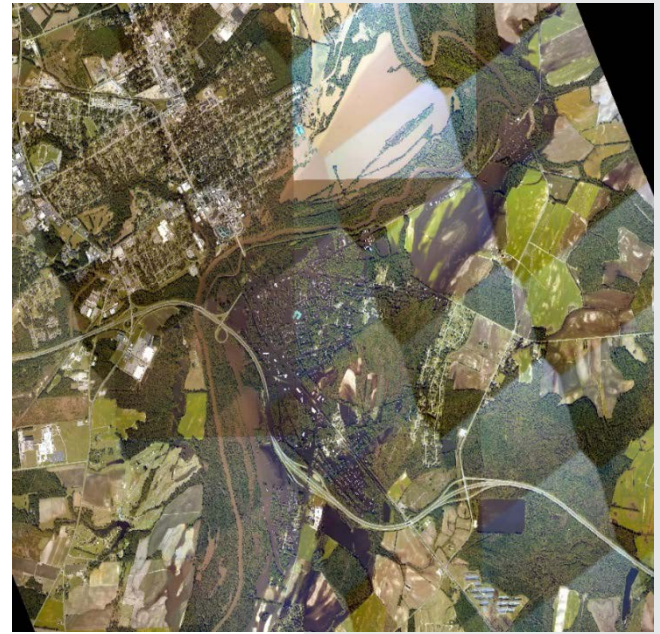
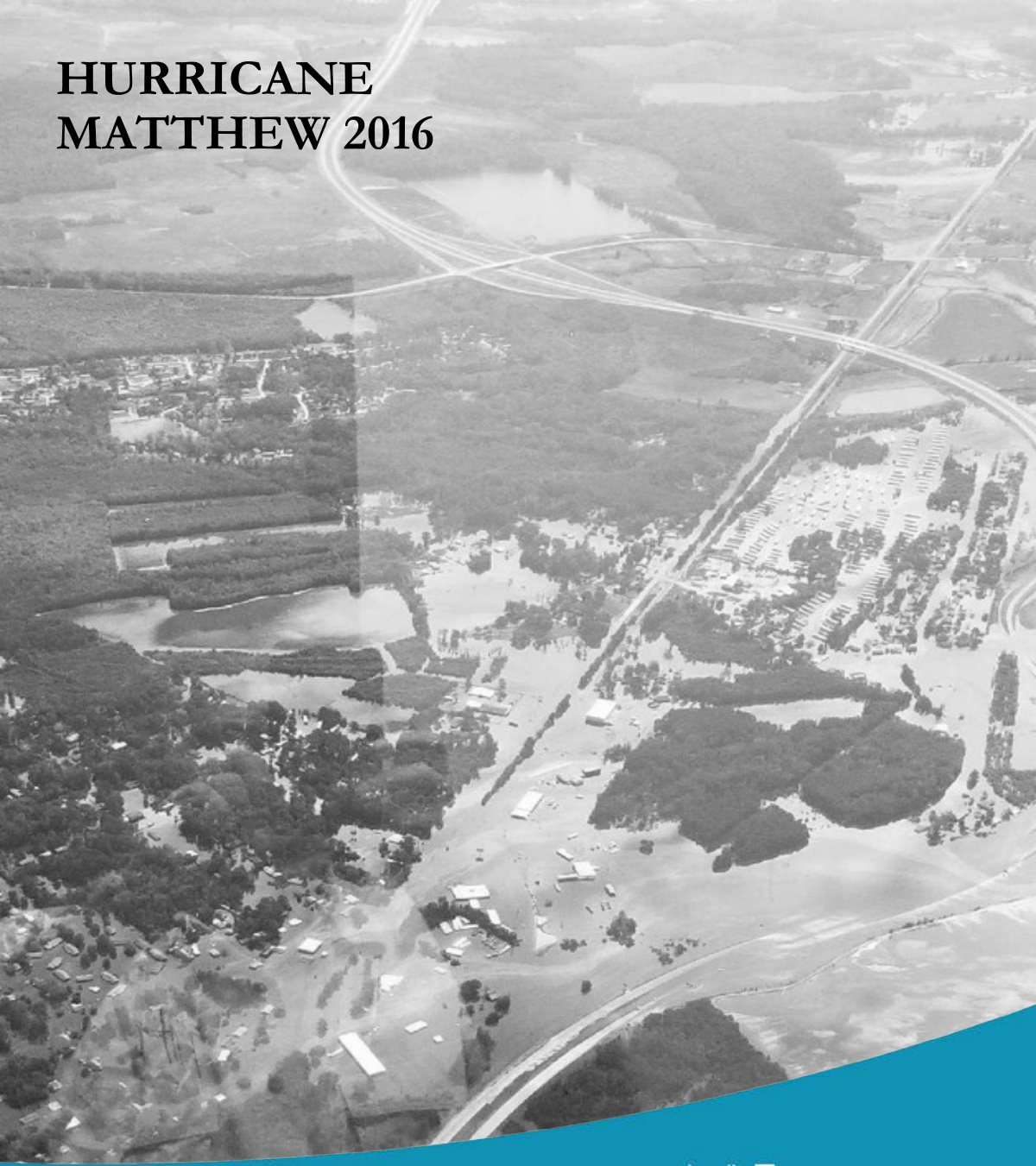
TOWN OF PRINCEVILLE, NORTH CAROLINA

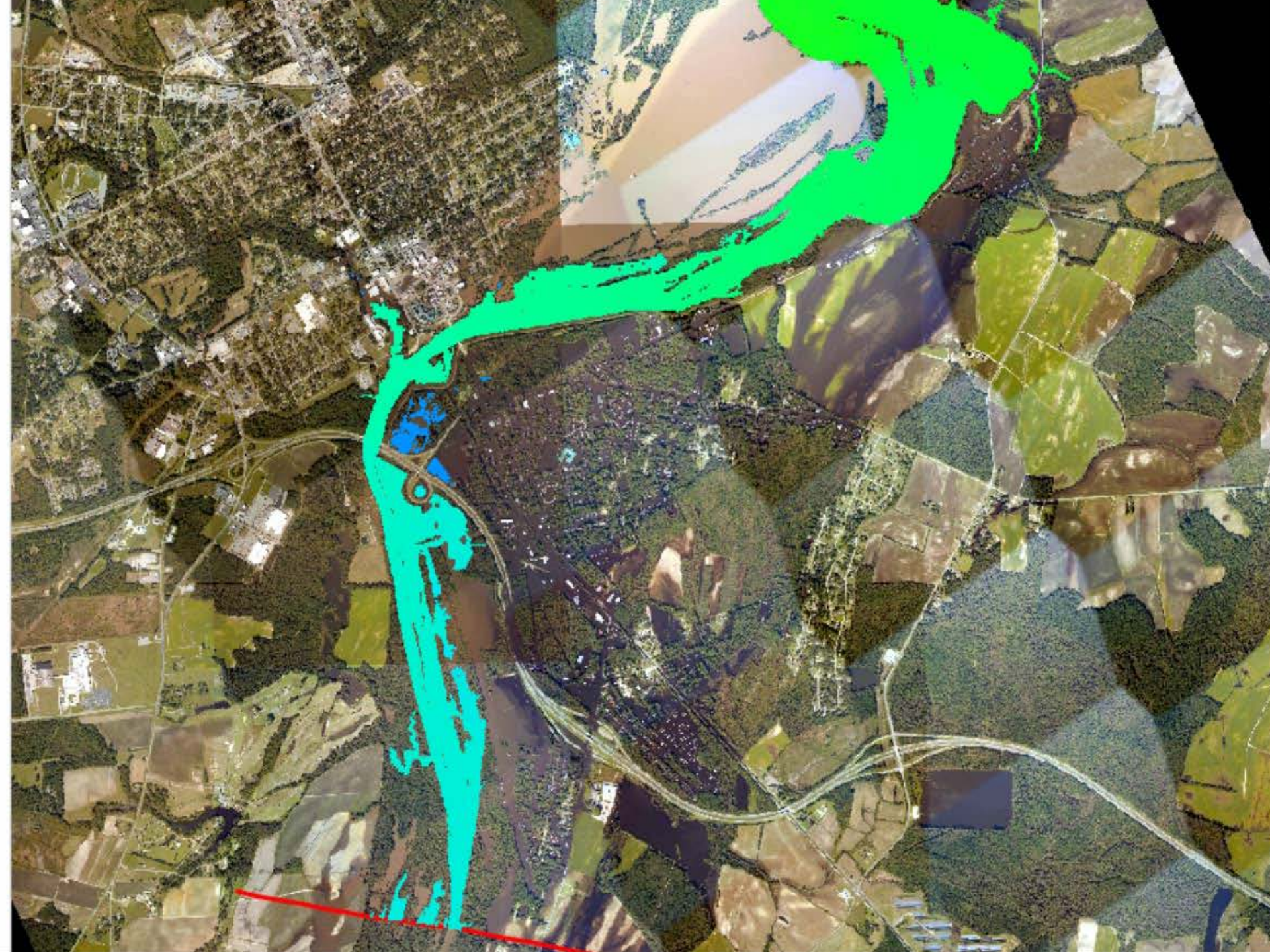


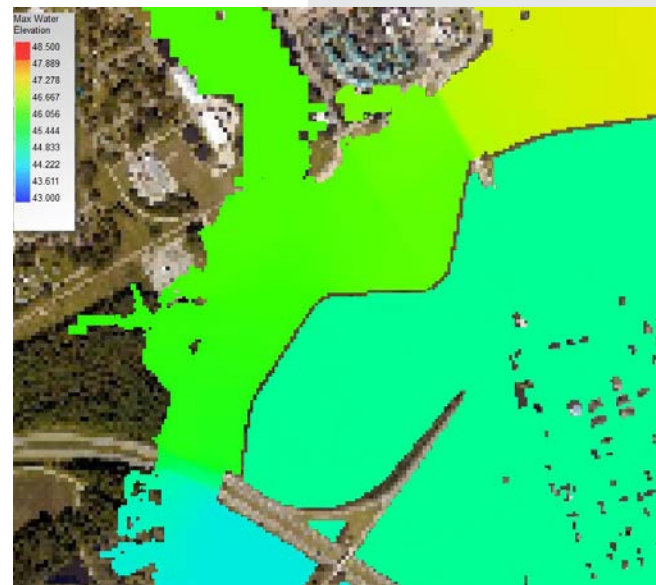
USACE LEVEE



HURRICANE MATTHEW 2016







USACE
Levee

NCDOT FLOOD COUNTERMEASURES

Abandoned Levee

US 64 Bypass



ELIZABETH CITY WATERFRONT

AND
CHARLES
CREEK
MASTER
PLAN



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WATERFRONT MASTER PLANNING CONCEPTS



Mission Statement

For Elizabeth City's Waterfront, We Will...

Deliver on our promise as North Carolina's Harbor of Hospitality by providing new opportunities for recreation, boating and commercial activity while supporting a strong community through thoughtfully designed public spaces and environmental preservation areas.



Core Tenets

To achieve the Mission, we will. . .



A Welcoming Harbor

Promote a diversity of welcoming harbor uses, anchored by commercial, recreation and marine uses, with the assemblage embodying the spirit and flavor of North Carolina's coastline.



Promote Accessibility

Make it easy, safe and enjoyable to arrive, park, walk, bike, play and connect with the harborfront.



Targeted Renewal

Focus renewal efforts at key parcels to transform the water's edge into a contiguous, animated harborfront that sustains activity yearround.



Verdant, Resilient Shore

Expand and connect natural landscape areas and habitat zones, providing new and strengthened greenways and blueways...the calling card of a renewed Elizabeth City.



Celebration of Community Heritage

Promote the scale and story of Elizabeth City and the region through site architecture, landscape, wayfinding, and other elements.

UNIVERSITY



THE PRESERVE

◀ HARBORFRONT

Fifty acres of quintessential North Carolina Harborfront supporting recreational boating, sailing, restaurants, parks and open spaces, and residential living. Key landside and in-water investments are advanced by the public and private sector to support Elizabeth City's mission to be the Harbor of Hospitality.

◀ THE PRESERVE

Charles Creek and floodplain are engineered to reduce flooding impacts to southern Elizabeth City. Extensive areas are preserved for park, open space and natural habitat zones.

◀ UNIVERSITY

The district supports expansion of research, athletics, recreation and residential uses. Mid Atlantic Christian University and other regional institutions of higher learning are catalytic to the long-term growth of this area.

◀ CAUSEWAY

A compelling welcome to Elizabeth City. Machelhe Island balances residential, maritime and ecological zones. Northern Machelhe Island evolves into an ecopark supporting hand powered water dependent recreation and other natural features.



LEGEND

KEY SITE FEATURES

-  Institution
-  Park & Open Space
-  Preserve
-  Retail / Commercial
-  Cultural Attraction
-  Sailing Center / Recreational Boating
-  Recreation Marina
-  Creek

-  1 Nature Park / Conservation Zone
-  2 Residential Units / Student Housing
-  3 MACU Boat Club
-  4 MACU Future Development Facilities
-  5 MACU Waterfront Esplanade
-  6 MACU Main Campus Buildings
-  7 MACU Campus Integration Zone
-  8 Jennette Brothers Redevelopment
-  9 Waterfront Promenade
-  10 Conservation Zone
-  11 Improved Park / Kayak Launch
-  12 Existing Gateway Signage
-  13 Harbor Beacon
(into Elizabeth City Harbor)
-  14 Streetscape Enhancements along
N. PoinDEXter Street



LEGEND
KEY SITE FEATURES

- Primary Circulation
- Secondary Circulation
- Bike / Pedestrian Network
- Art



LEGEND

KEY SITE FEATURES

- Institution
- Park & Open Space
- Preserve
- Retail / Commercial
- Cultural Attraction
- Sailing Center / Recreational Boating
- Recreation Marina
- Creek

- 1 Strengthened Bike / Ped Link
- 2 Elizabeth City Harbor Esplanade
- 3 Community Pier (end of Main)
- 4 Transient Marina Berths
- 5 Streetscape Enhancements
- 6 Targeted Redevelopment Zone
- 7 Mariners' Wharf Park Enhancements
- 8 Mariners' Wharf Park Marina and Boating Support Facilities
- 9 Targeted Redevelopment Zone
- 10 Outdoor Sculpture Garden
- 11 Enhanced link to Celebration / Waterfront Park
- 12 Park, Events and Performances
- 13 Coast Guard Park / Sailing and Watersports Center
- 14 Streetscape and Infrastructure Enhancements(BMPs)
- 15 Charles Creek Greenway And Trail
- 16 Berms and Flood Mitigation
- 17 Recreational Fishing Pier
- 18 Targeted Redevelopment Zone
- 19 Elizabeth City Marina
- 20 Waterfront Event Lawn
- 21 Repurposed Public & Community Event Space & Marina Services



LEGEND
KEY SITE FEATURES

- Primary Circulation
- Secondary Circulation
- Bike / Pedestrian Network
- Art



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BUCKTOWN

harbor



2000



2015



THE VISION PLAN

LEGEND

- 1 Bucktown Harbor Living Shoreline
- 2 Commercial Fishing Operational Float Relocation
- 3 Commercial Fishing Operational Area and Storage
- 4 Expanded Marina Recreation Boating Docks
- 5 Modification of Western Recreational Launch and Overlook
- 6 Bucktown Marsh Boardwalk
- 7 Fishing Pier and Pavilion
- 8 Parking Area Expansion
- 9 Bucktown Marina Harborwalk
- 10 Southern Passive Recreational Lawn
- 11 Children's Active Play Area, Lawns and Pavilions
- 12 Water Feature
- 13 Dockmaster Building, Marina Center and Restrooms
- 14 Kayak and Paddleboard Storage Building and Recreational Float
- 15 North Great Lawn and Event Area
- 16 Western Sunset Lawns
- 17 Northern Ramble
- 18 Harbor Beacon
- 19 Multi-Purpose Pavilion
- 20 Levee Crossing for Bike and Pedestrian Activities
- 21 Lakefront Trail Bike / Pedestrian Extension
- 22 Entry Enhancements and Streetscape Beautification



THE VISION PLAN



One square mile of salt marsh stores the carbon equivalent of 76,000 gal. of gas annually.



Marshes trap sediments from tidal waters, allowing them to **grow in elevation** as sea level rises.



Living shorelines improve **water quality**, provide **fisheries habitat**, increase **biodiversity**, and promote **recreation**.



Marshes and oyster reefs act as natural **barriers** to waves. **15 feet** of marsh can **absorb 50%** of incoming wave energy.



Living shorelines are **more resilient** against storms than bulkheads.

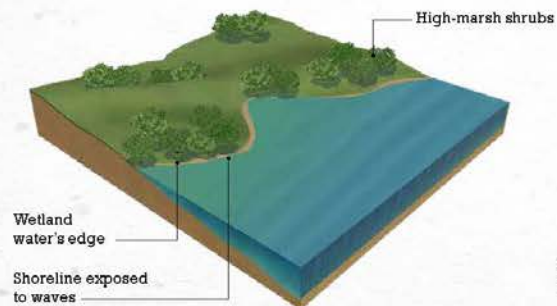


33% of shorelines in the U.S. will be **hardened** by 2100, decreasing fisheries habitat and biodiversity.

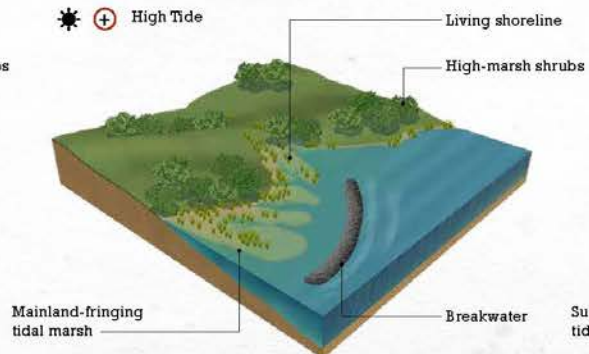


Hard shoreline structures like **bulkheads** prevent natural marsh migration and may create seaward **erosion**.

☀️ - Low Tide



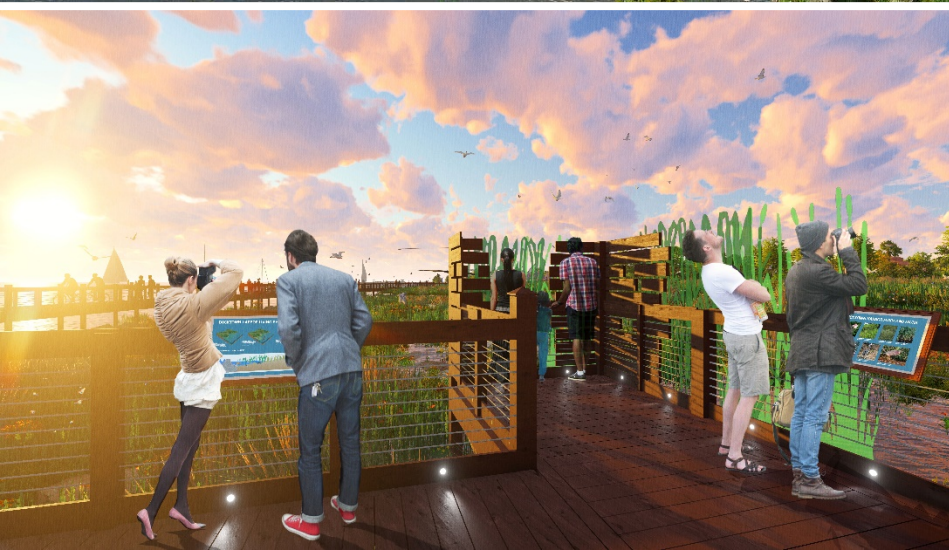
☀️ + High Tide



☀️ + High Tide in Storm









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Creative People, Practical Solutions.®

THANK YOU!

mrobinson@moffattnichol.com

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