RESILIENCY AND HAZARD MITIGATION PLAN

moffatt & nichol | 75 Years

KICKOFF MEETING

Presented to:

City of New Bern

Core Planning Team

July 2020

Welcome and Overview

- **Amanda Ohlensehlen**
  Community & Economic Development Manager

Path to Resilience

2013
- Developed a partnership with NCSU to initiate hazard mitigation efforts

2014
- Completed the Jack Smith Creek Wetlands & Stormwater Management Project

2015
- Installation of monitoring stations for the Jack Smith Creek Wetlands

2016
- Active participant of the Craven County Long Term Recovery Group

2017
- Established a Redevelopment Commission comprised of citizen representatives to address equity and reinvestment
- Supported the development of the Hurricane Matthew Resilient Re-Development Plan for Craven County

2018
- Recognized the need to develop a Hazard Mitigation and Resiliency Plan
- Advocate in D.C. with federal resiliency leaders

2019
- The CARES Committee hosted multiple subject matter experts on resiliency
- Award of $$ from multiple granting agencies to establish a holistic resiliency plan

2020
- Award of $328,500 from NCORR to assist with storm resiliency, recovery, and mitigation projects
- Initiated the development of a Resiliency and Hazard Mitigation Plan
- Released an updated Final Flood Hazard Determinations

- **City of New Bern has been actively working towards becoming a more resilient city**
- **Success is a process and requires commitment from all levels**
- **Grant funding is a testimony to the importance of the City's dedication and commitment to this plan**

Agenda

- Welcome and Overview
- Introductions
- Goals and objectives
- Project team
- Planning process
- Schedule
- Roles and responsibilities
- Next steps
- Open discussion

- **Flexible agenda**
- **Please feel free to post questions to the chat function as we go along to help facilitate discussion at the end**
- **We will try to keep the meeting to 90 minutes but 2 hours is allocated to allow for discussion**

Introductions


Mike Robinson


Jeff Crump


Dawn York


Rebeckah Sims


Allison Bryan


Jeff Hicks


Matt Hutchins


Lisa Craig

- Consultant Team
- Moffatt & Nichol
- NEMAC+FernLeaf
- The Craig Group

Introductions

- Who you are
- Your primary role
- How you see yourself supporting resiliency and flood mitigation
- The piece you add to the puzzle!

Overall Project Goal

To develop a citywide
Resiliency and Hazard Mitigation Plan
to increase community resilience to the flood hazard, including sea level rise and climate change, through an engaged stakeholder process

Overall Project Objectives

- **Create a resiliency framework**
  - Avoid hazards
  - Withstand future events
  - Support recovery
  - “Build Back Better” at the citizen, business, and municipal levels
- **Develop strategy initiatives**
  - Routine activities
  - Highly feasible solutions
  - Ambitious solutions

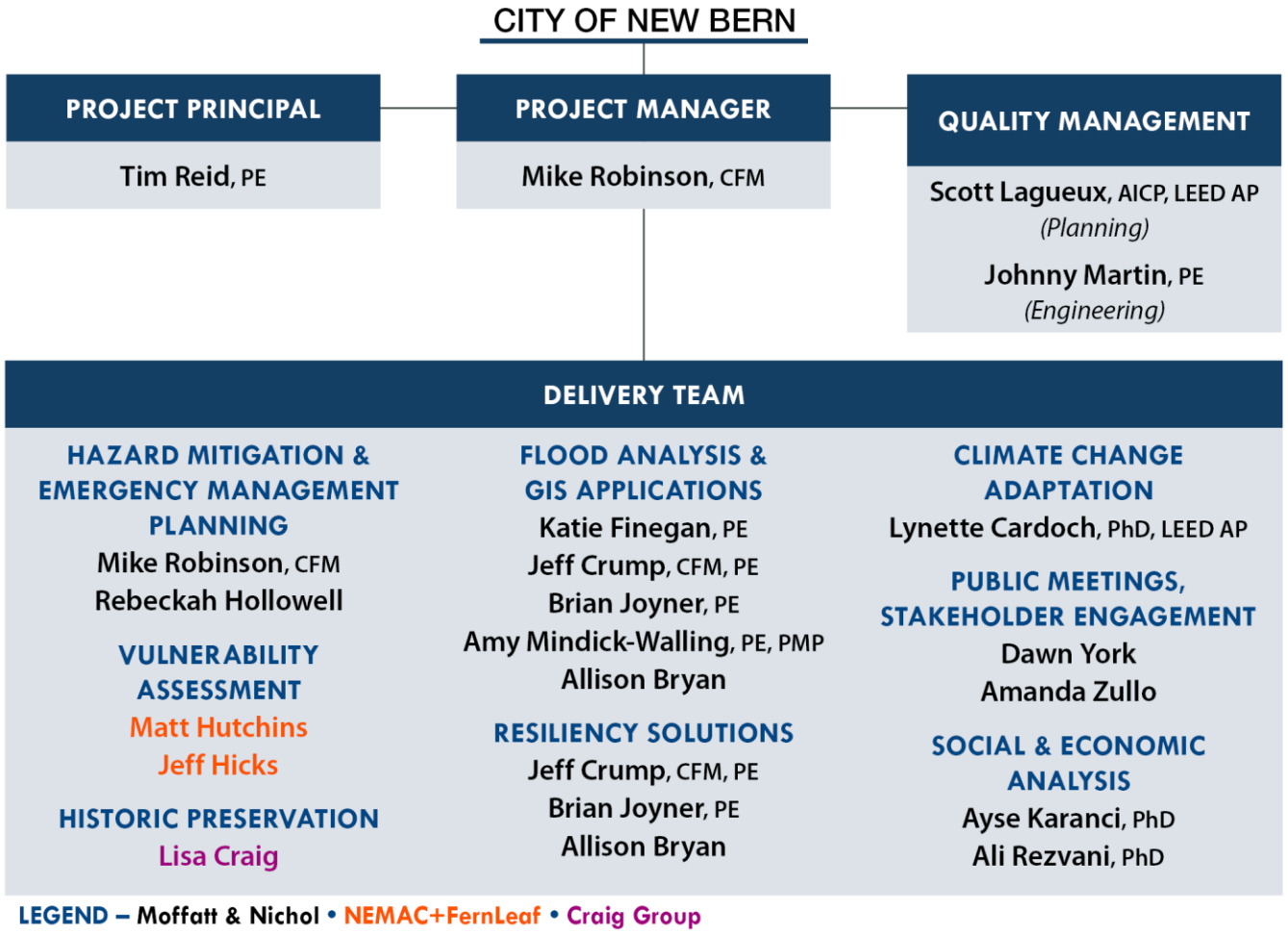
- **Social and community health programming**
- **Land-use regulatory changes**
- **Large-scale infrastructure projects**
- **Green infrastructure practices and projects**

Specific Focus Areas

- Underserved and socially vulnerable populations
- Historic structures
- Green and hybrid infrastructure solutions
- Structural and economic resilience in historic main street and commercial areas
- Less reliance on Federal funding following future disasters
- Land use changes to improve resiliency
- Coordination within and beyond the corporate limits of New Bern
- CRS participation under the NFIP

- **Regional Resilience Tool Kit**
- **12 North Carolina State Disaster Recovery Framework Recovery Support Functions**
- **6 FEMA Recovery Support Functions**

Project Team



- Specialists from Moffatt & Nichol, NEMAC+FernLeaf, and The Craig Group
- All aspects of the planning process covered by appropriate staff

Planning Process

Phase 1: Data Collection, Assessment and Public Engagement

- Task 1: Data Gathering
- Task 2: Public Input
- Task 3: Vulnerability and Risk Assessment

Phase 2: Analysis and Plan Development

- Task 4: Review of Possible Solutions
- Task 5: Prepare Draft Plan

Phase 3: Preparation of Resiliency and Hazard Mitigation Plan

- Task 6: Public Review of Draft Plan
- Task 7: Prepare Final Plan

- **Each task has various subtasks**
- **Broad project team to help support individual requirements**
- **Two subcontractors to assist with specialized requirements**

Vulnerability and Risk Assessment

Framework for assessing vulnerability and risk

- Exposure = the presence of people and assets that could be affected
- Vulnerability = the susceptibility of assets
- Risk = the likelihood and consequence

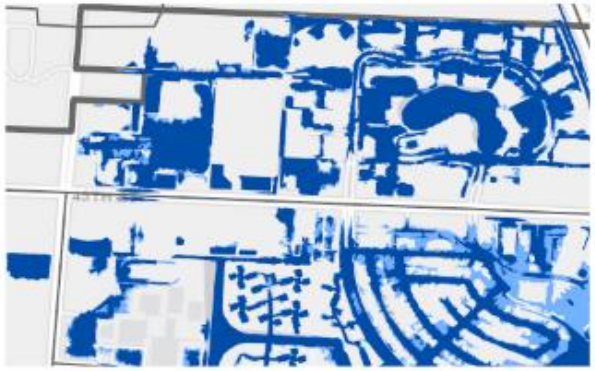
- **Resiliency has many different definitions, but can commonly be summarized by saying the ability to withstand, recover and respond more quickly and effectively following sudden shocks and in light of chronic stressors**

Same Exposure; Different Vulnerability

Asset

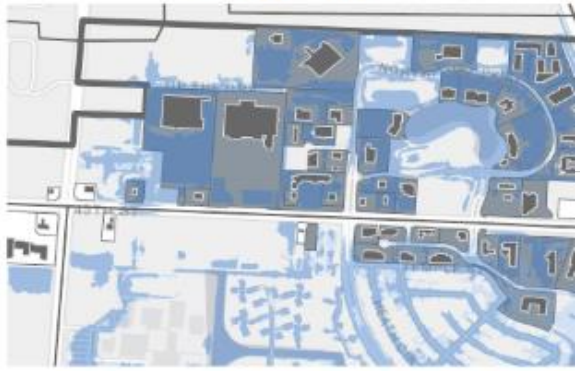
Commercial Property

Threat



Rainfall-induced flooding

Exposure



Commercial property and rainfall-induced flooding

Your Input

VULNERABILITY				RISK			
Potential Impact		Adaptive Capacity		Probability		Consequence	
High	Structure in inundation extent and historic, multiple-residence, apartment, manufactured house, nursing/retirement home, group home, or mobile home park	Low	Structure in floodplain built before 1979 without a BFE requirement	High	In 10-yr inundation extent	High	Structure exposed and above median value
Med	Structure in inundation extent and single-residence	Med	Structure in floodplain built from 1979 to 2015 (at BFE)	Med	In 100-yr inundation extent	Med	Structure exposed and below median value
Low	No structure in inundation extent (land only)	High	Structure built out of floodplain or structure in floodplain built 2016 to present (1-2 ft above BFE)	Low	In 500-yr inundation extent	Low	No structure exposed

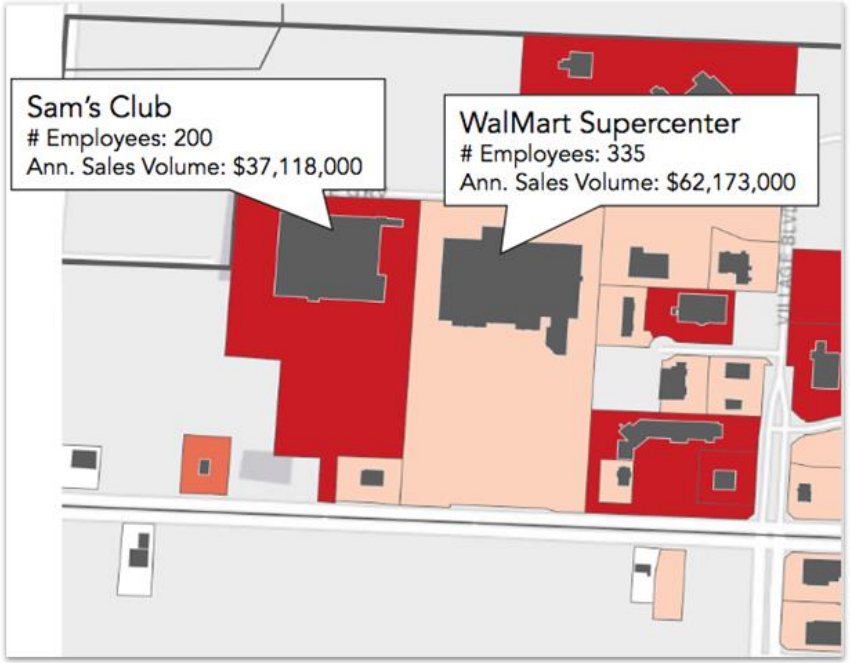
Vulnerability and Risk

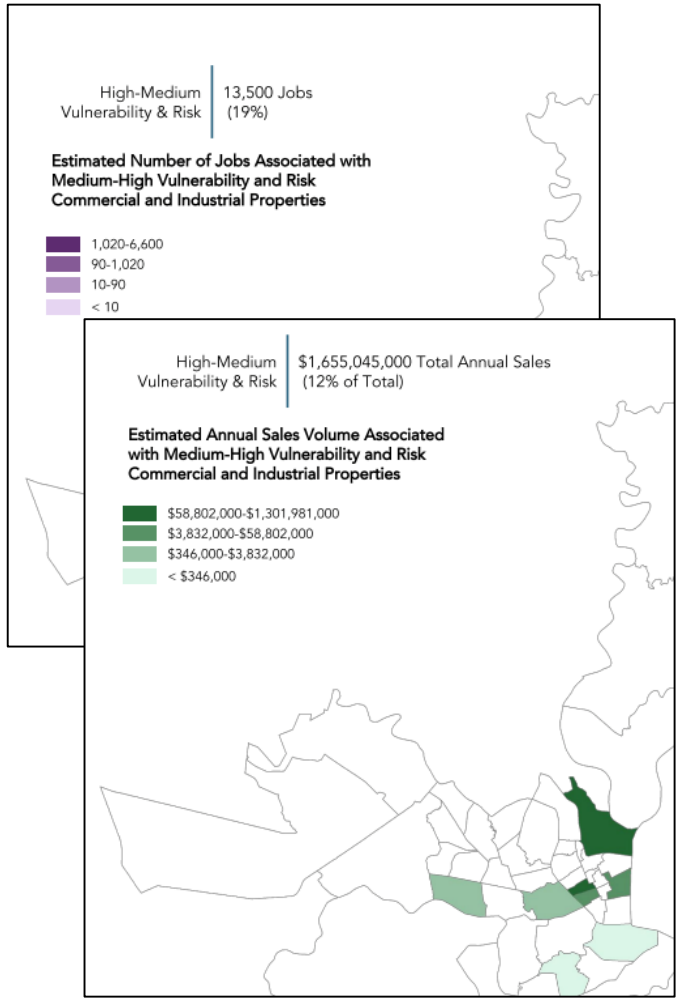
Commercial property and rainfall-induced flooding

Direct Impact to Property and Public Services

- Criticality of assets and other property-level characteristics

Economic Impacts



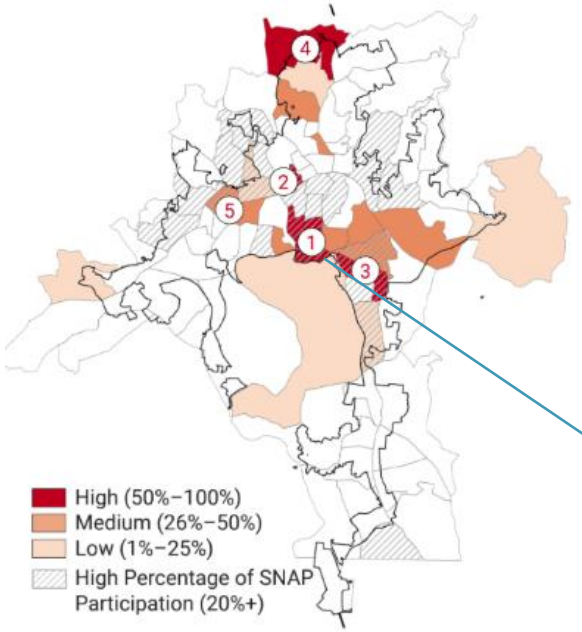


- Potential business disruption
  - Annual Sales Volume
  - Jobs

Critical Road Access and Mobility

- Access for emergency response
- Potential loss of mobility and access to services

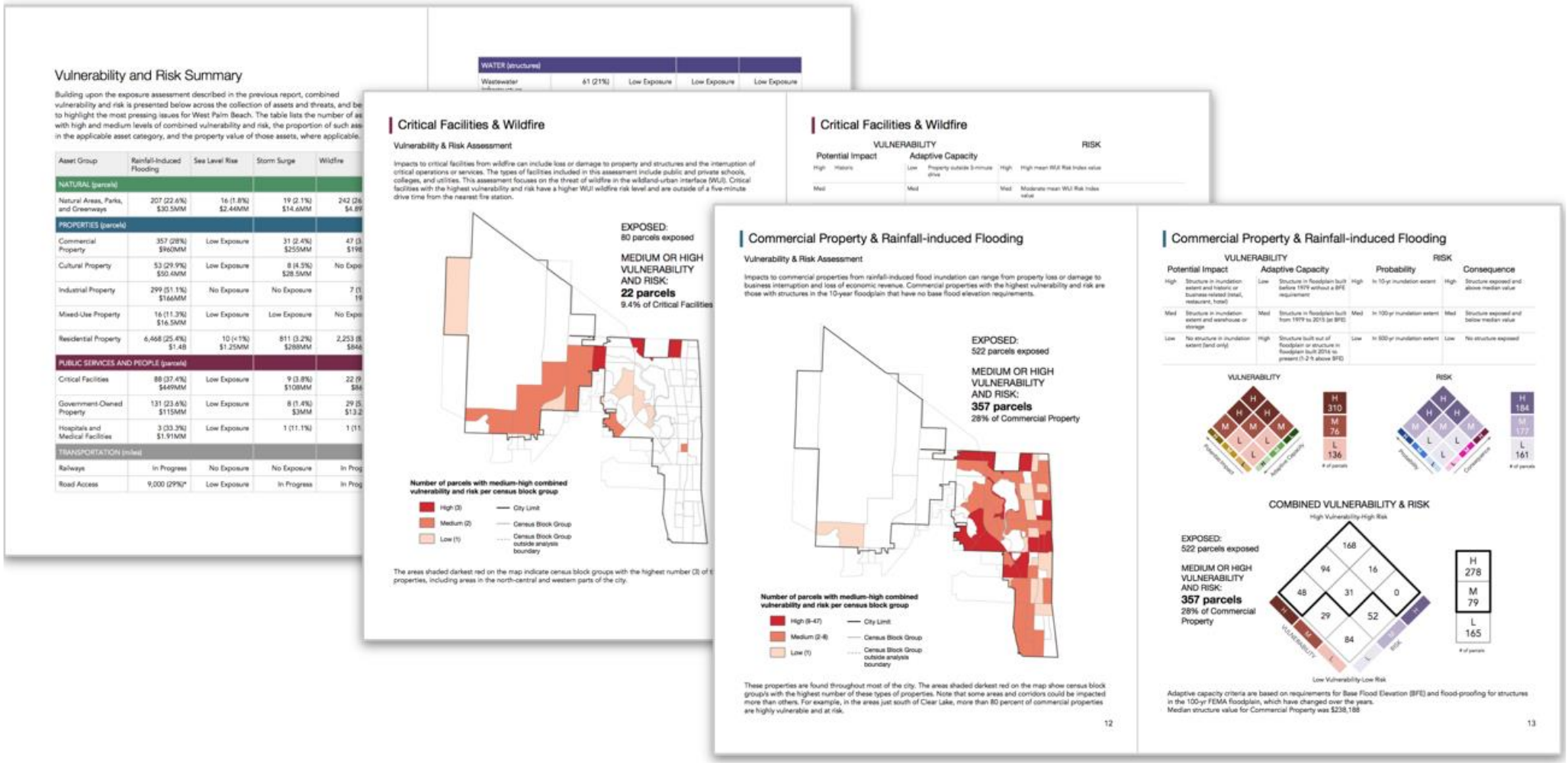
Social Vulnerability



Neighborhood Summary		Total Assets	500-yr Flood Events	
Roads & Mobility	Inaccessible Major Roads	28 lane mi	9 lane mi	(32%)
	Inaccessible Minor Roads	33 lane mi	24 lane mi	(73%)
Properties Isolated	Commercial	192	186	(97%)
	Residential	1,773	1,752	(99%)
	Critical Facilities	13	12	(92%)
	Government	14	5	(36%)
	Parks & Cultural	72	53	(74%)
Potential Economic Impact	Annual Sales Volume	$500M	$400M	(95%)
	Jobs/Employees	3,896	3,722	(95%)
Social Vulnerability	Overall Social Vulnerability	High (Socioeconomic, Household Composition & Disability, Minority Status & Language, Housing & Transportation)		
	Public Housing	38	37	(97%)
	SNAP Retailers	8	8	(100%)

- **Social vulnerability is an important consideration for all threats**

For a Clear Understanding Citywide



Vulnerability and Risk Summary

Building upon the exposure assessment described in the previous report, combined vulnerability and risk is presented below across the collection of assets and threats, and be to highlight the most pressing issues for West Palm Beach. The table lists the number of as with high and medium levels of combined vulnerability and risk, the proportion of such ass in the applicable asset category, and the property value of those assets, where applicable.

Asset Group	Rainfall-Induced Flooding	Sea Level Rise	Storm Surge	Wildfire
NATURAL (parcels)				
Natural Areas, Parks, and Greenways	207 (22.6%) $30.5MM	16 (1.8%) $2.44MM	19 (2.1%) $14.6MM	242 (26 $4.89
PROPERTIES (parcels)				
Commercial Property	357 (28%) $960MM	Low Exposure	31 (2.4%) $255MM	47 (3 $198
Cultural Property	53 (29.9%) $50.4MM	Low Exposure	8 (4.5%) $28.5MM	No Expo
Industrial Property	299 (51.1%) $166MM	No Exposure	No Exposure	7 (1 19
Mixed-Use Property	16 (11.3%) $16.5MM	Low Exposure	Low Exposure	No Expo
Residential Property	6,468 (25.4%) $1.4B	10 (<1%) $1.25MM	811 (3.2%) $288MM	2,253 (8 $846
PUBLIC SERVICES AND PEOPLE (parcels)				
Critical Facilities	88 (37.4%) $449MM	Low Exposure	9 (3.8%) $108MM	22 (9 $84
Government-Owned Property	131 (23.6%) $115MM	Low Exposure	8 (1.4%) $3MM	29 (5 $13.2
Hospitals and Medical Facilities	3 (33.3%) $1.91MM	Low Exposure	1 (11.1%)	1 (11
TRANSPORTATION (miles)				
Railways	In Progress	No Exposure	No Exposure	In Prog
Road Access	9,000 (29%)*	Low Exposure	In Progress	In Prog

WATER (structures)				
Wastewater	61 (21%)	Low Exposure	Low Exposure	Low Exposure

Critical Facilities & Wildfire

Vulnerability & Risk Assessment

Impacts to critical facilities from wildfire can include loss or damage to property and structures and the interruption of critical operations or services. The types of facilities included in this assessment include public and private schools, colleges, and utilities. This assessment focuses on the threat of wildfire in the wildland-urban interface (WUI). Critical facilities with the highest vulnerability and risk have a higher WUI wildfire risk level and are outside of a five-minute drive time from the nearest fire station.

EXPOSED:
80 parcels exposed

MEDIUM OR HIGH VULNERABILITY AND RISK:
22 parcels
9.4% of Critical Facilities

Number of parcels with medium-high combined vulnerability and risk per census block group

High (3) — City Limit
Medium (2) — Census Block Group
Low (1) — Census Block Group outside analysis boundary

The areas shaded darkest red on the map indicate census block groups with the highest number (3) of t properties, including areas in the north-central and western parts of the city.

Critical Facilities & Wildfire

VULNERABILITY — RISK

Potential Impact — Adaptive Capacity

Commercial Property & Rainfall-induced Flooding

Vulnerability & Risk Assessment

Impacts to commercial properties from rainfall-induced flood inundation can range from property loss or damage to business interruption and loss of economic revenue. Commercial properties with the highest vulnerability and risk are those with structures in the 10-year floodplain that have no base flood elevation requirements.

EXPOSED:
522 parcels exposed

MEDIUM OR HIGH VULNERABILITY AND RISK:
357 parcels
28% of Commercial Property

Number of parcels with medium-high combined vulnerability and risk per census block group

High (8-47) — City Limit
Medium (2-4) — Census Block Group
Low (1) — Census Block Group outside analysis boundary

These properties are found throughout most of the city. The areas shaded darkest red on the map show census block group's with the highest number of these types of properties. Note that some areas and corridors could be impacted more than others. For example, in the areas just south of Clear Lake, more than 80 percent of commercial properties are highly vulnerable and at risk.

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Commercial Property & Rainfall-induced Flooding

VULNERABILITY — RISK

Potential Impact — Adaptive Capacity — Probability — Consequence

VULNERABILITY

H 310
M 76
L 136
# of parcels

RISK

H 184
M 177
L 161
# of parcels

COMBINED VULNERABILITY & RISK

High Vulnerability-High Risk

168
94 16
48 31 0
29 52
84

H 278
M 79
L 165
# of parcels

Low Vulnerability-Low Risk

EXPOSED:
522 parcels exposed

MEDIUM OR HIGH VULNERABILITY AND RISK:
357 parcels
28% of Commercial Property

Adaptive capacity criteria are based on requirements for Base Flood Elevation (BFE) and flood-proofing for structures in the 100-yr FEMA floodplain, which have changed over the years.
Median structure value for Commercial Property was $238,188

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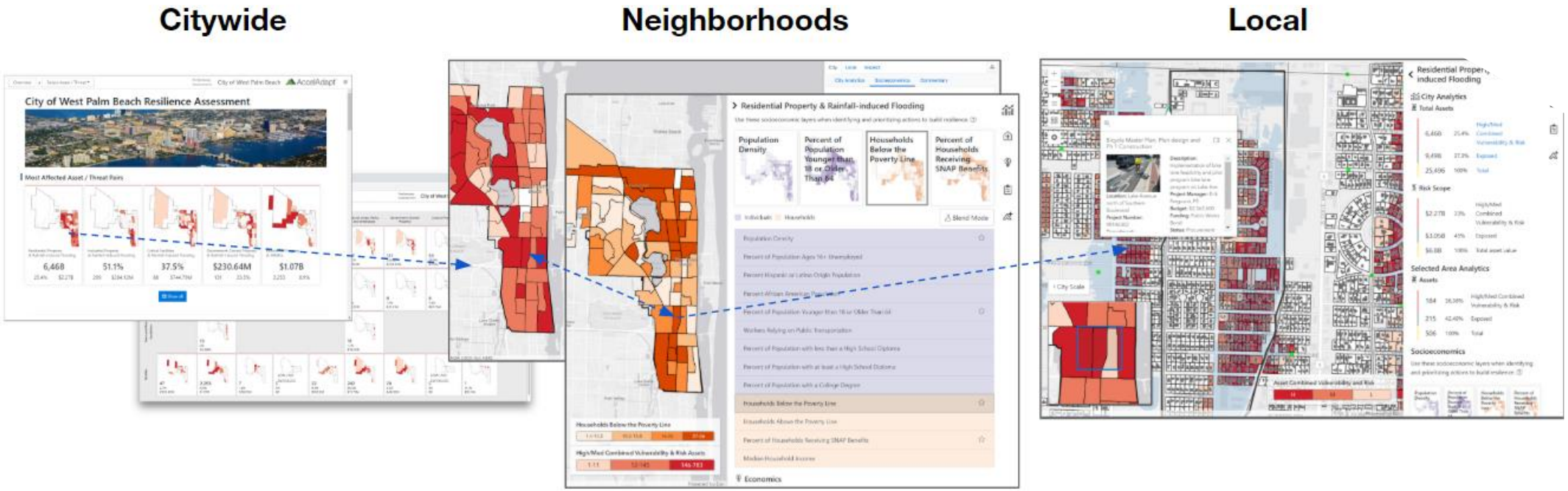
Take Deeper Dives With AccelAdapt™

Which leverages your outstanding GIS investments



City-Specific Approach

Flooding Threats for the City of New Bern

Threat	Data Source
Floodplain Inundation	FEMA flood maps
Storm Surge	NOAA SLOSH MOM (Categories 1-5)

- Riverine flooding
- Coastal flooding
- Storm surge inundation
- Stormwater/urban flooding/excessive rainfall
- Levee/dam failure inundation
- Sea Level Rise (SLR) influences (as an exacerbator of risk)
- Climate change influences (as an exacerbator of risk)

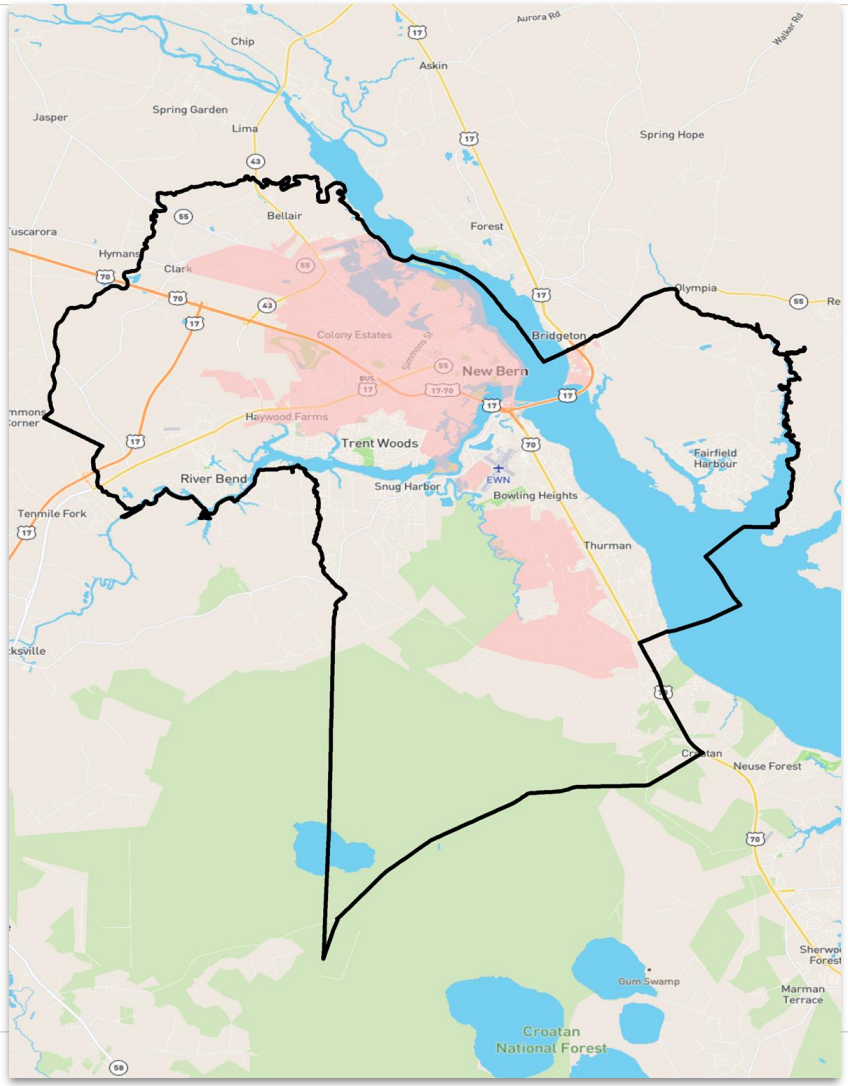
- **Need to discuss exact list of threats to be used for analysis**
- **Need to prioritize that list to assist with workflow**
- **Possibly via online survey to capture input**

Asset Themes and Categories

Asset Theme	Asset Category
Property and Public Services	Residential Property
	Commercial & Industrial Property
	Critical Facilities
	Government-Owned Property
	Parks & Cultural/Historical Property
Economic	Annual Sales Volume
	Jobs
Roads and Mobility	Major and Minor Roads
	Critical Access to Property
People and Socioeconomics	People and Socially Vulnerable Populations
	Public Housing
	SNAP Retailers

- **Data sources used to represent community assets**
  - **Craven County Property Parcels**
  - **Historic Property Inventory**
  - **Business Data**
  - **Regional Road Network Dataset**
  - **U.S. Census/ACS**
  - **CDC Social Vulnerability Index**

Proposed Study Area

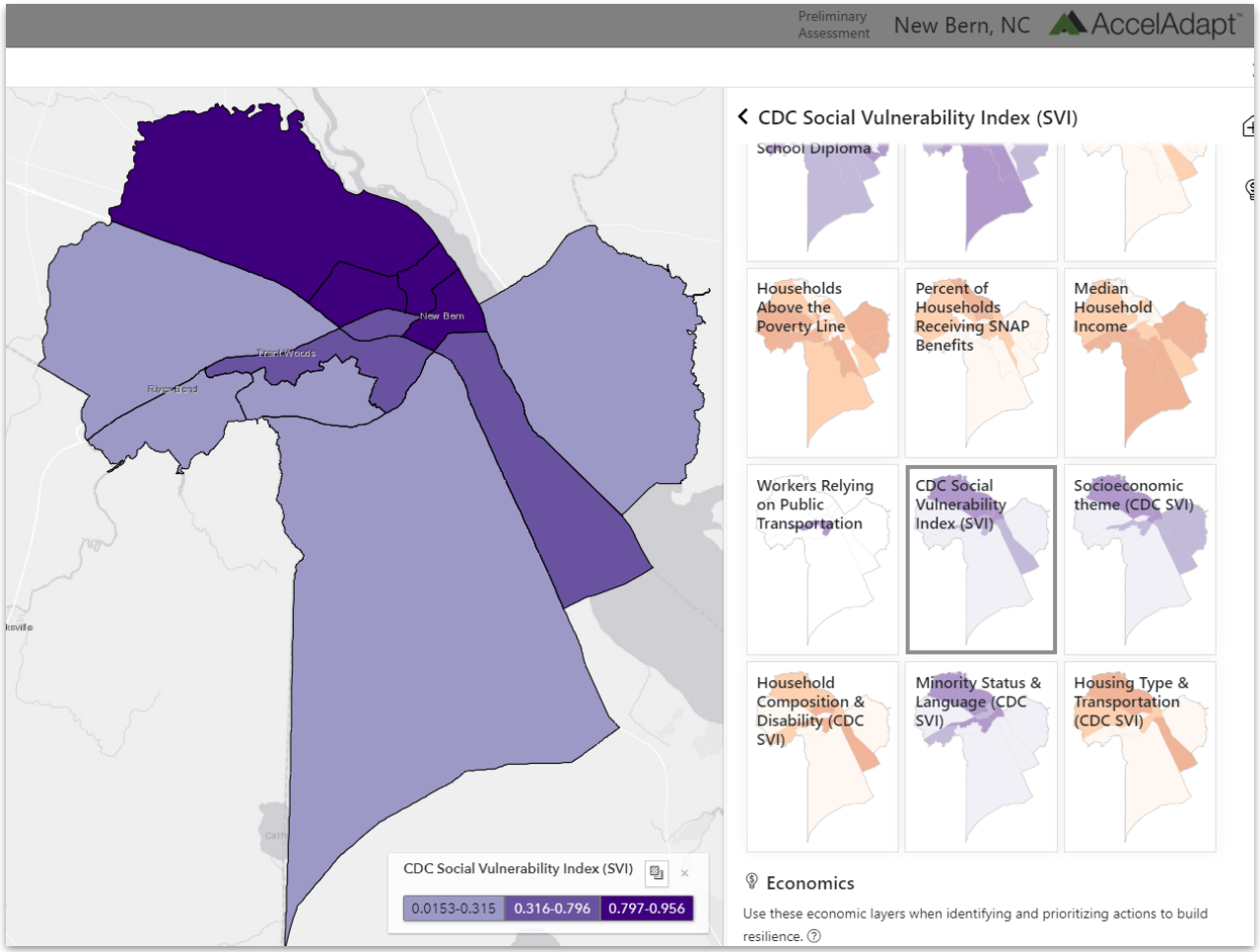


Proposed Study Extent

City Limits

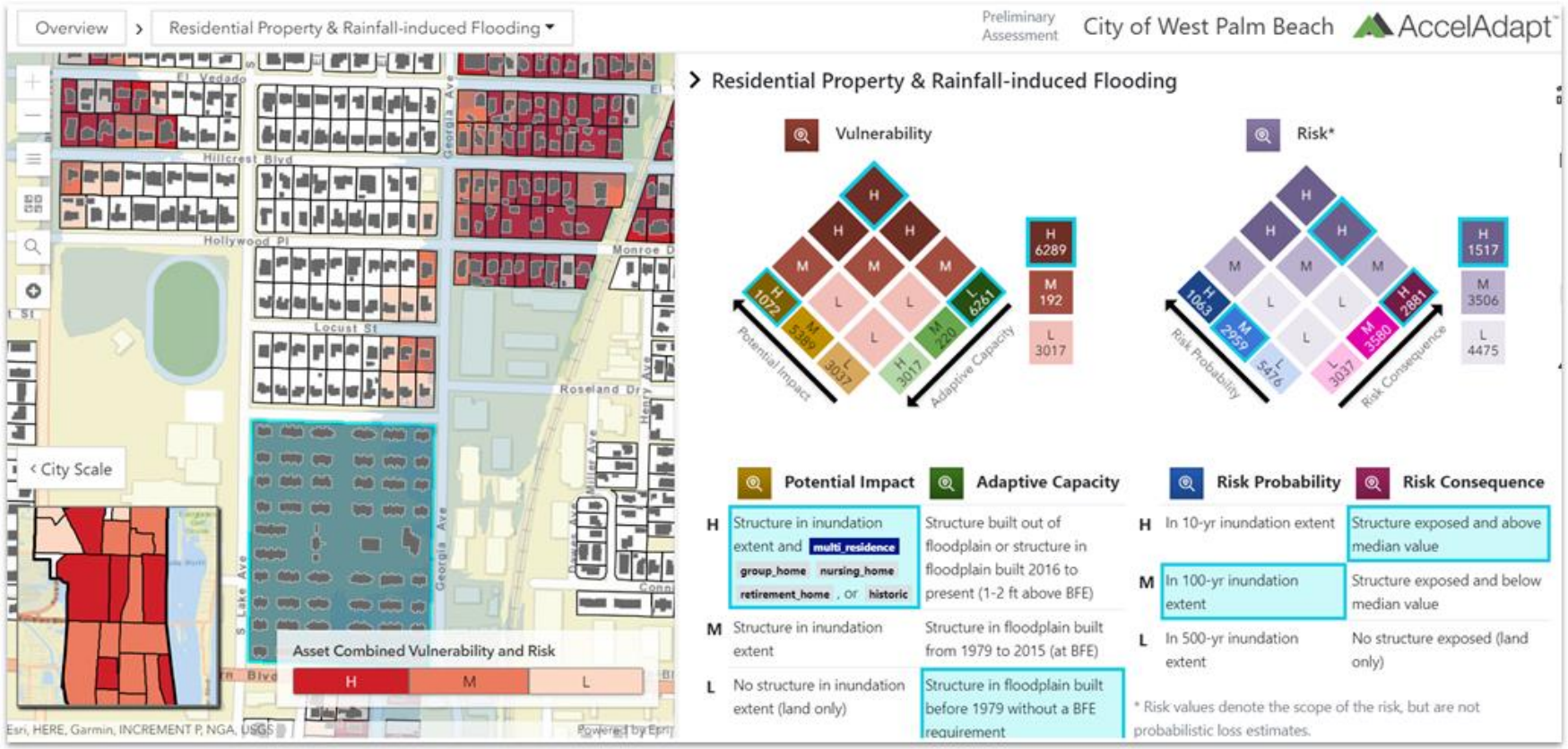
- Includes all census tract areas that intersect with the City Limits
- Will capture input from the planning team regarding exact spatial extent

Socioeconomics

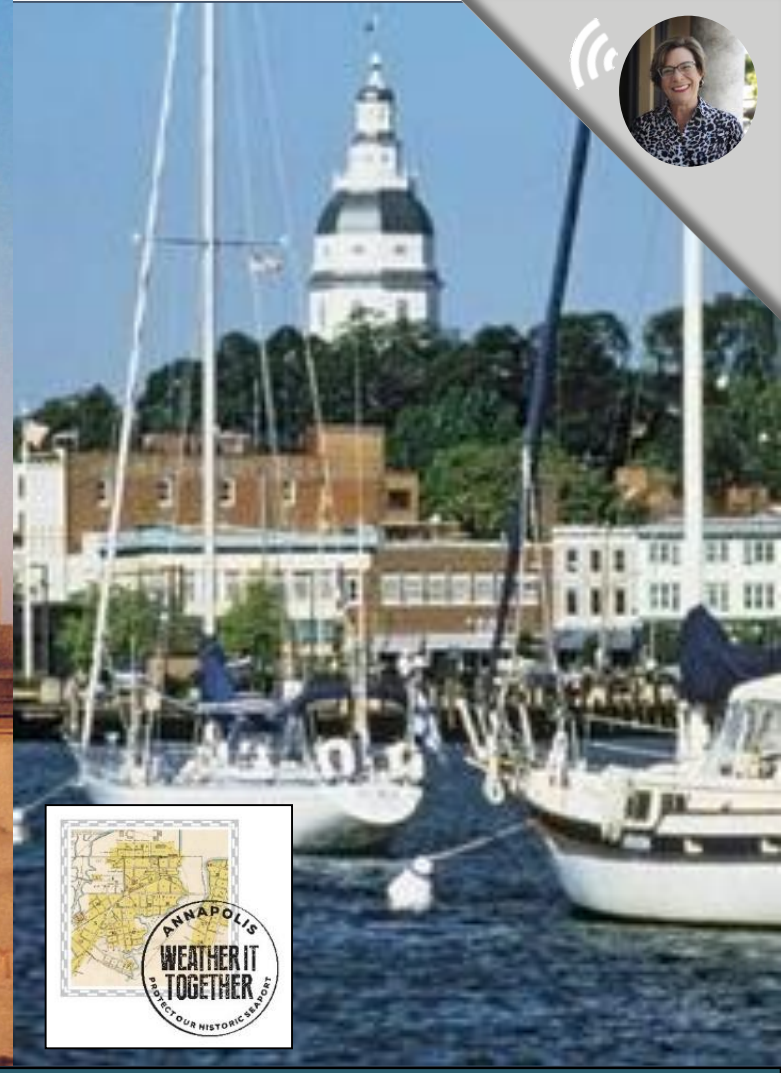


- Social vulnerability will be a key focus throughout the assessment
- Have started to assemble socioeconomic metrics for the project area
- Overall Social Vulnerability Index (CDC), based on themes:
  - Socioeconomic
  - Household Composition & Disability
  - Minority Status & Language
  - Housing & Transportation

Supporting Insights and Use of Information



- **Using AccelAdapt, staff will be able to explore preliminary vulnerability and risk assessments and be able to:**
  - View and interact with information (citywide, neighborhood, historic district and parcel-level)
  - Identify key concerns and vulnerable areas
  - Provide input and feedback



Heritage & Resiliency

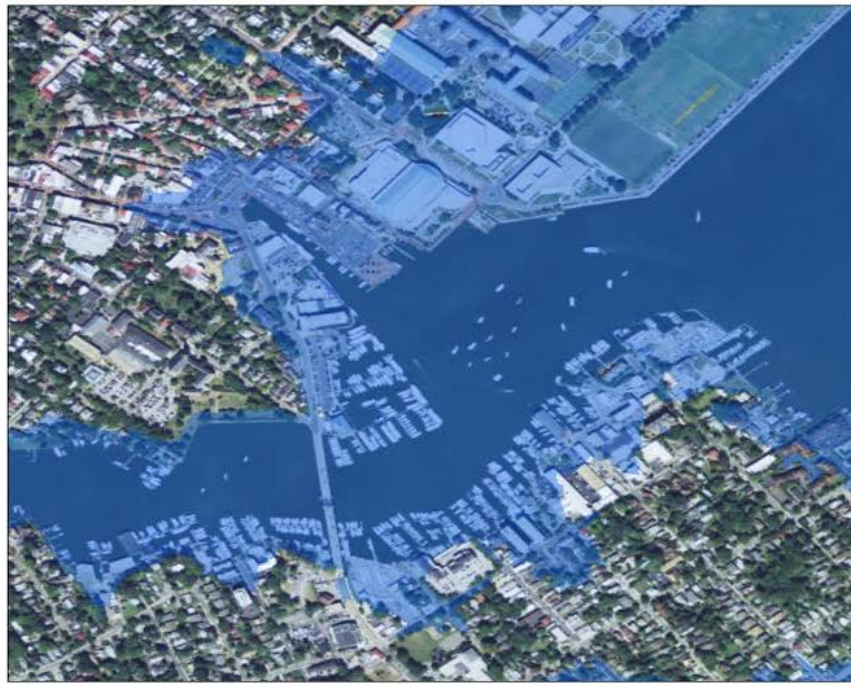
Engaging Historic Coastal Communities in Resilience Planning

Annapolis, Maryland:
A Case Study in Hazard Mitigation Planning

Annapolis:
A Landmark at Risk
Sea Level Rise and Tidal Flooding

- Greatest nationwide increase in nuisance flooding between 1963 - 2013 - 925%
- An average of 3.8 to 39.3 days per year
- By 2065, nuisance flooding is estimated to occur 385 times each year - more than once a day

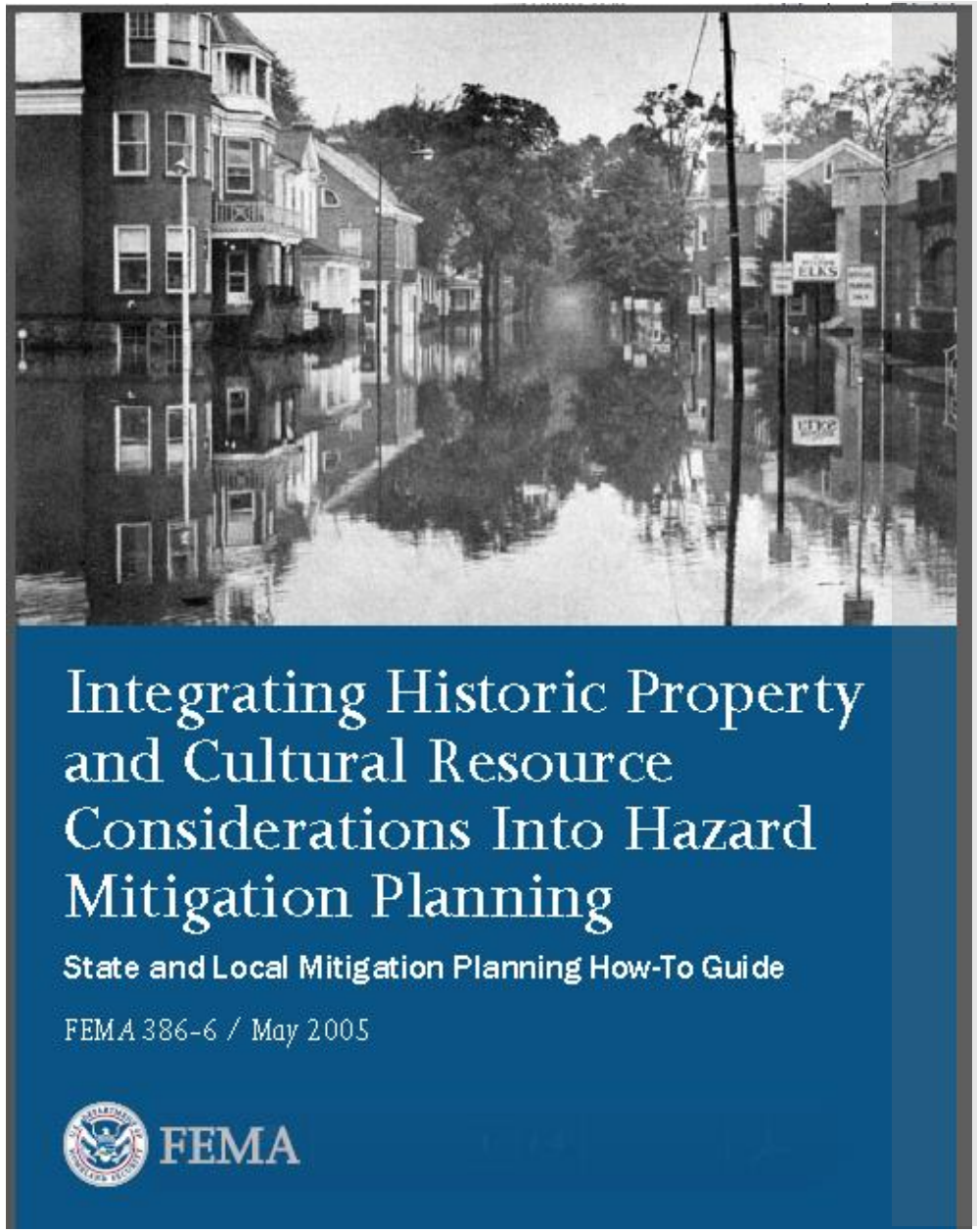
Annapolis FEMA Flood Insurance Rate Map (FIRM) 2016



Base Flood Elevation (BFE)
4.5’ = 1% annual chance flood
+ 3.7’ for sea level rise
= 8.2’ for daily future conditions (2100)

Design Flood Elevation(DFE)
BFE + 2’ freeboard = 6.5’

FEMA Hazard Mitigation Planning for Cultural Resources



Hazard mitigation planning is the process of determining how to reduce or eliminate the loss of life and property damage resulting from natural and manmade hazards.

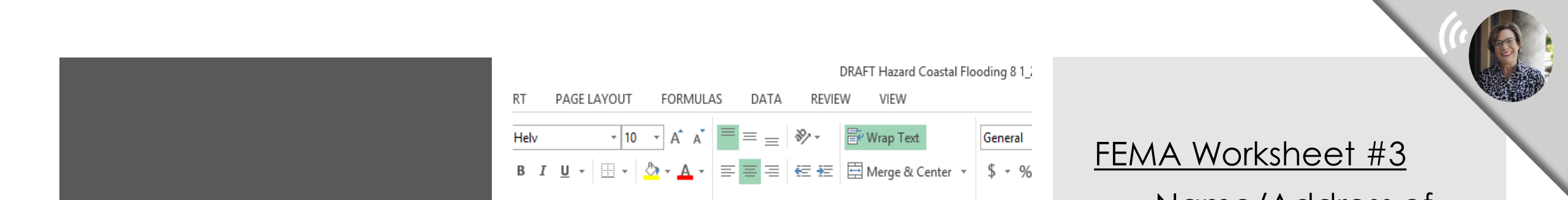
- Organize efforts to develop a mitigation plan;
- Identify hazards and assess losses to community;
- Set mitigation priorities and goals and write the plan;
- Implement the mitigation plan.

Weather It Together

Step #1 – Organize Resources

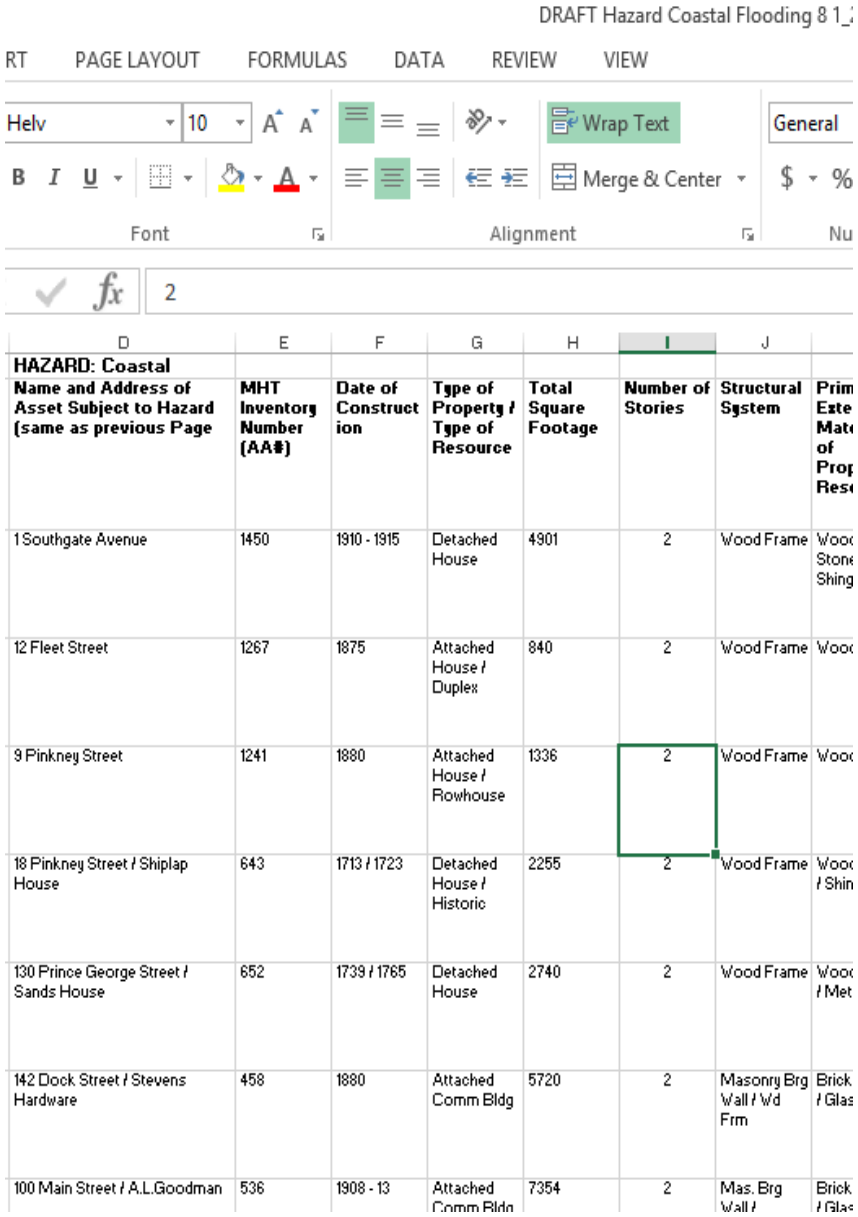
Weather It Together was conceived as a public/private partnership to address the impacts of Climate Change and Sea Level Rise on historic and cultural resources in Annapolis, the Chesapeake Bay and the nation.

Weather It Together brought together a 32-member advisory planning team, architects & planning consultants, technology specialists, nearly 3,000 community members and $485k in funding.



Weather It Together

Step #2 – Survey Resources



DRAFT Hazard Coastal Flooding 8 1_2

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D	E	F	G	H	I	J	
HAZARD: Coastal							
Name and Address of Asset Subject to Hazard (same as previous Page	**MHT Inventory Number (AA#)**	**Date of Construction**	**Type of Property / Type of Resource**	**Total Square Footage**	**Number of Stories**	**Structural System**	**Prim Exte Mat of Prop Res**
1 Southgate Avenue	1450	1910 - 1915	Detached House	4901	2	Wood Frame	Wooc Stone Shing
12 Fleet Street	1267	1875	Attached House / Duplex	840	2	Wood Frame	Wooc
9 Pinkney Street	1241	1880	Attached House / Rowhouse	1336	2	Wood Frame	Wooc
18 Pinkney Street / Shiplap House	643	1713 / 1723	Detached House / Historic	2255	2	Wood Frame	Wooc / Shin
130 Prince George Street / Sands House	652	1739 / 1765	Detached House	2740	2	Wood Frame	Wooc / Met
142 Dock Street / Stevens Hardware	458	1880	Attached Comm Bldg	5720	2	Masonry Brg Wall / Wd Frm	Brick / Glas
100 Main Street / A.L.Goodman	536	1908 - 13	Attached Comm Bldg	7354	2	Mas. Brg Wall /	Brick / Glas

FEMA Worksheet #3

- Name/Address of Resource
- Date of Construction
- Type of Property
- Square Footage
- Structural System
- Primary Materials
- Current Function
- Current Condition
- Owner Interest in Mitigation

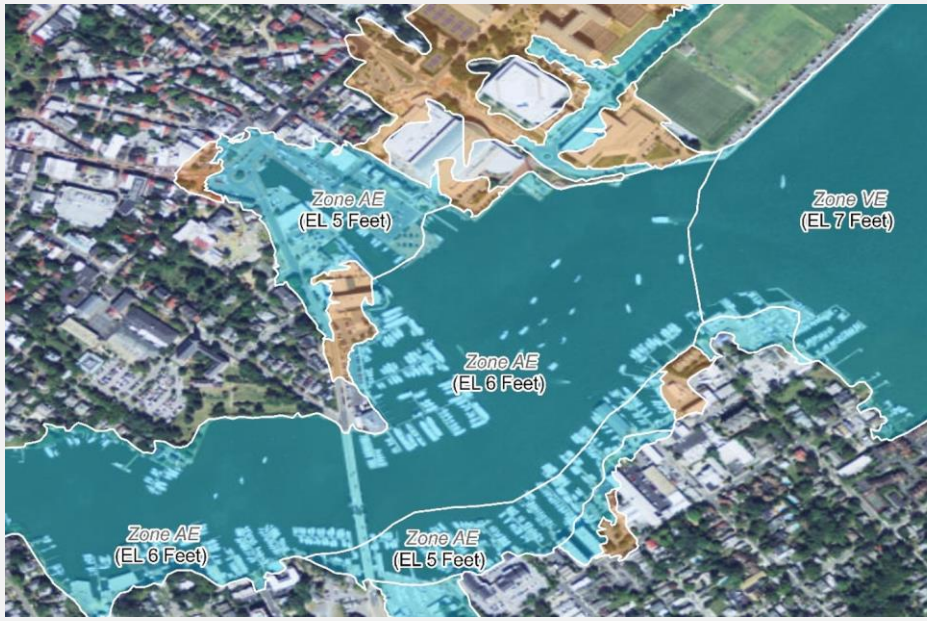
Weather It Together

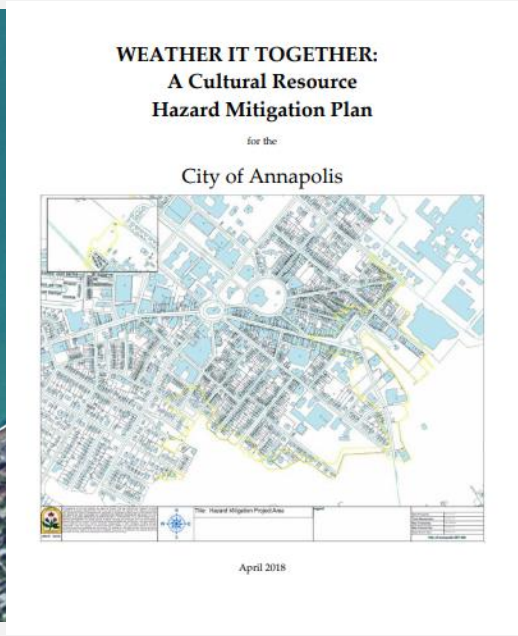
Step #2 – Survey Resources & Assess Economic Vulnerability & Community Value

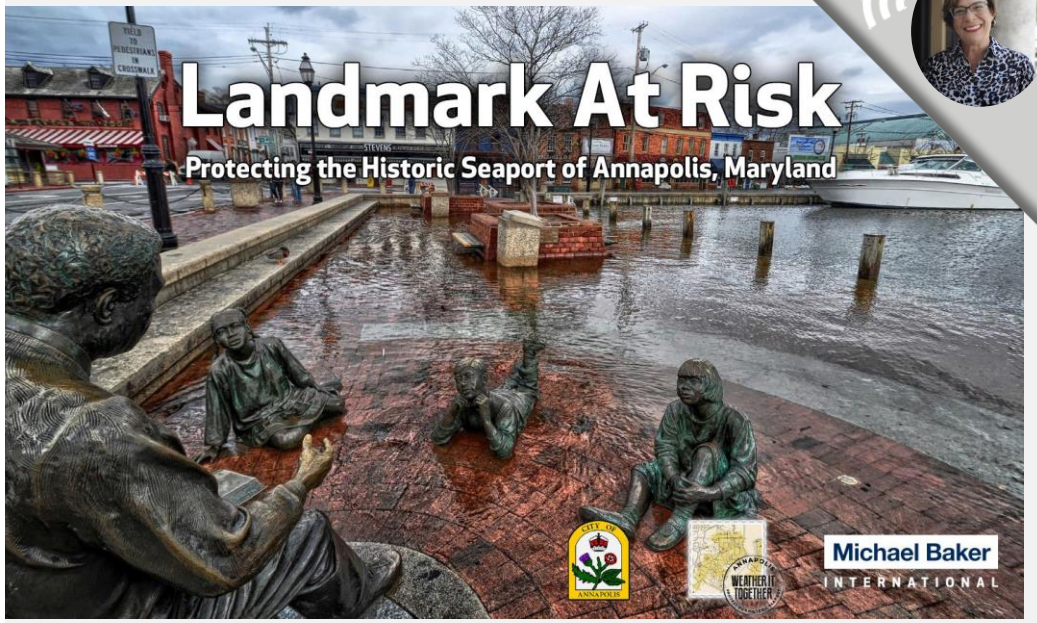
FEMA Worksheets #3 & #4

Property Vulnerability (High, Med, Low)
Loss to Structure ($)
Loss to Contents ($)
Loss of Function / Use ($)
Displacement Cost ($)
= $288 million loss/cost per event

Historic Designation (NR, Local)
Geographic Significance
Level of Significance (H/M/L)
Economic Importance (H/M/L)
Degree of Integrity (H/M/L)
Public Sentiment (H/M/L)
= Total Community Value




WEATHER IT TOGETHER:
A Cultural Resource
Hazard Mitigation Plan
for the
City of Annapolis
April 2018



Weather It Together

Step #3 – Draft the Plan

Step #4 – Plan for Implementation

- Establish Goals & Objectives
- Identify & model adaptation strategies using preservation priorities, benefit cost analysis and STAPLEE
  - STAPLEE – Social, Technical, Administrative, Political, Legal, Economic & Environmental
- Secure funding, amend policies, seek approval
  - ***Weather It Together: Nation's first FEMA-approved cultural resource-based mitigation plan***

Weather It Together Award Winning Community Engagement

Make it Inviting & Fun!

- Branding
- Graphic Facilitation
- Radio Interviews
- Town Halls
- Open Houses
- Planning Charrettes
- Workshops
- Lectures
- Book signings
- Tours

St. Augustine, Florida:
A Case Study in Community Value Assessment

Determining Community Value in St. Augustine:

An Online Survey & Workshop on Community Resilience & Cultural Resources

January 31, 2019

National Trust for Historic Preservation®

FLAGLER COLLEGE

CITY OF ST AUGUSTINE EST. 1565

Do you own a property or business in the flood zone?

- Yes - 38%
- No - 36%
- Don’t know - 26%

Develop and share tools and best practices including:

- Partnering with experts to identify cost effective / feasible adaptation measures - 83%
- Developing a "how-to" workbook on adapting historic properties - 66%
- Completing a 3D laser-scan of historic areas - 48%
- Seeking funds for model adaptation projects on historic properties - 44%

National Register properties with greatest community value

1. Castillo de San Marcos – 67%
2. Hotel Ponce de Leon/Flagler – 57%
3. St. Augustine NHL District – 52%
4. Hotel Alcazar/Lightner Museum – 51%
5. Lincolnville Historic District – 45%
6. Government House – 39%
7. The Bridge of Lions – 39%
8. St. Augustine Lighthouse – 38%
9. Cathedral Basilica – 32%
10. FL National Guard HQ/Cemetery – 29%

Summary of Guidelines on Flood Adaptation for Rehabilitating Historic Buildings

Planning and Assessment for Flood Risk Reduction is a step that should be completed for all project prior to selecting an adaptation
The U.S. Department of the Interior, National Park Service publication: Guidelines on Flood Adaptation for Rehabilitating Historic Buildings, 20
appropriate adaptation strategies for historic buildings and offers the recommended and not recommended modes of act

Protect Utilities

Protect Utilities

- Relocate all Utilities Above the Flood Risk Level
- Protect Utilities in a Watertight Impermeable Enclosure
- Elevate & Anchor Exterior Mechanical Equipment Compatible with Historic Characte
- Utilize Fencing & Landscaping to Screen Exterior Mechanical Equipment
- Relocate Interior Mechanical Equipment
- Relocate Ducts, Pipes, & Conduits
- Utilize Duct Insulation that can be Removed After Flood
- Install an Electrical Disconnect Above Flood Risk Level
- Eliminate Electric Service from Flood Prone Areas
- Install Backflow Prevention Devices
- Install Sump Pumps

Dry Floodproofing

Structural Considerations

- Evaluate Strength of Masonry Walls & Footings Against Flood
- Anchor the Structure to the Foundation

Site Drainage

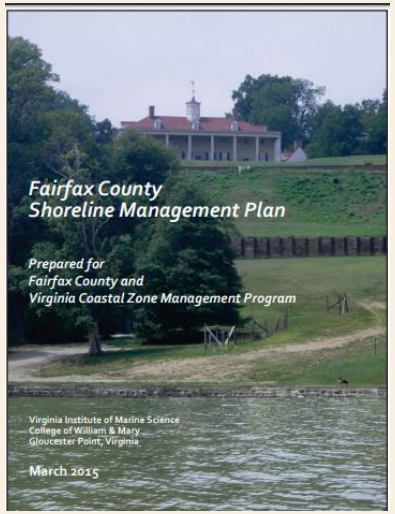
- Prepare to Manage Floodwaters
- Plan for Removing Water Post Flooding
- Install Drainage System Around Foundation & Footings
- Install Backflow Prevention Devices
- Install Sump Pumps

Coverings & Coatings

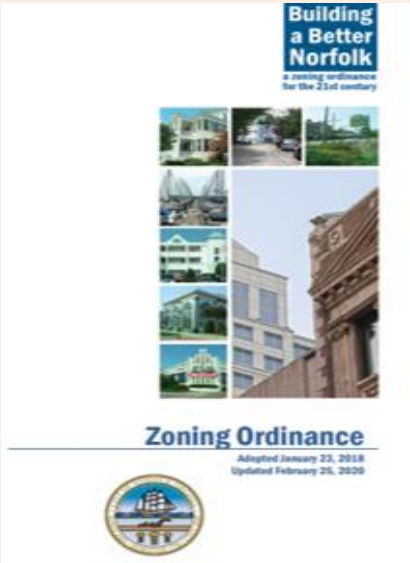
- Design Temporary or Permanent Closures
- Install Stanchions, Fasteners, or Tracks for Flood Shields
- Install a Low Wall Around Basement Windows
- Install Vents in Foundations Walls that Can be Sealed
- Coasting or Covering the Exterior of Foundation Wall Surfaces
- Wrap the Foundation with Temporary Removable Waterproof Membrane
- Inspect Permanent Coating or Membranes Regularly

Flood Mitigation Decision Guidance

Public Policy Best Practices Analysis

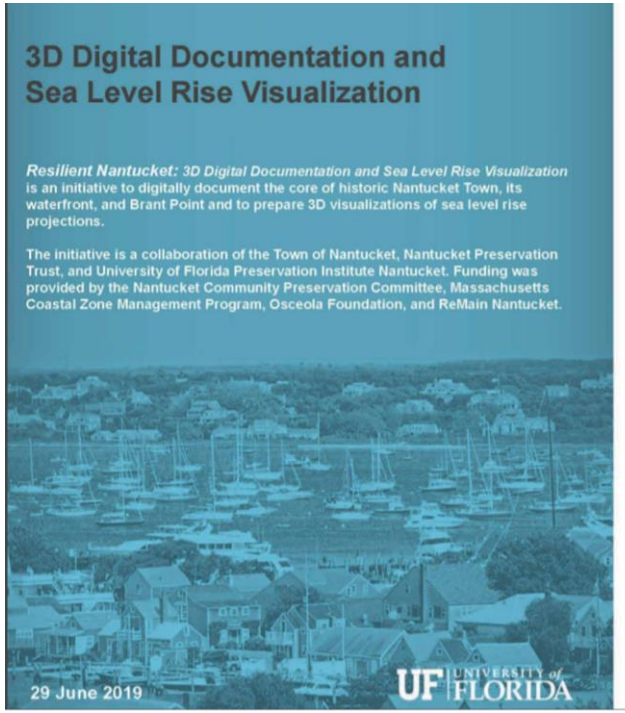


- **Norfolk** Zoning Ordinance designates Coastal Resilience and Upland Resilience Overlay zones
- **San Francisco** adopted guidance for incorporating sea level rise into capital planning processes.
- **Fairfax County, VA** Wetlands Board has adopted a living-shorelines first policy.
- **Boston, MA** requires completion of a future conditions' checklist for new and redevelopment.
- **Virginia Beach** Purchase of Development Rights (PDR) and Transferrable Development Rights



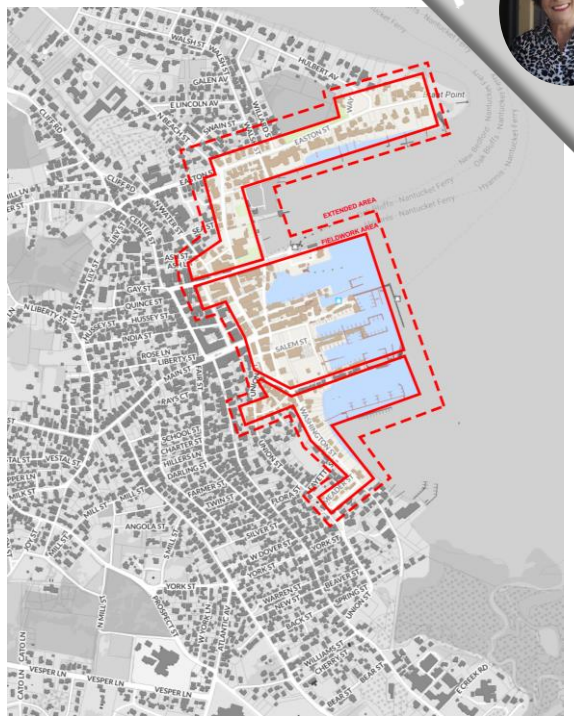
Nantucket, Massachusetts:
A Case Study in Resilience Documentation & Design

Develop and share tools and best practices including:



RESILIENT NANTUCKET

DISCLAIMER
The Resilient Nantucket data and visualizations illustrate the scale of potential sea level rise flooding at spe
locations within the Town of Nantucket. Water levels represent Mean Higher High Water (MHHW), exclu
wind driven tide, wave action, and other factors that influence flooding. The data and visualizations are wit
warranty to their performance or fitness for any particular purpose. The entire risk associated with the re



- Partner with experts to identify cost effective adaptation actions – 85%
- Develop a “how-to” workbook on adaptation – 69%
- Complete a 3-D laser-scanning project – 64%

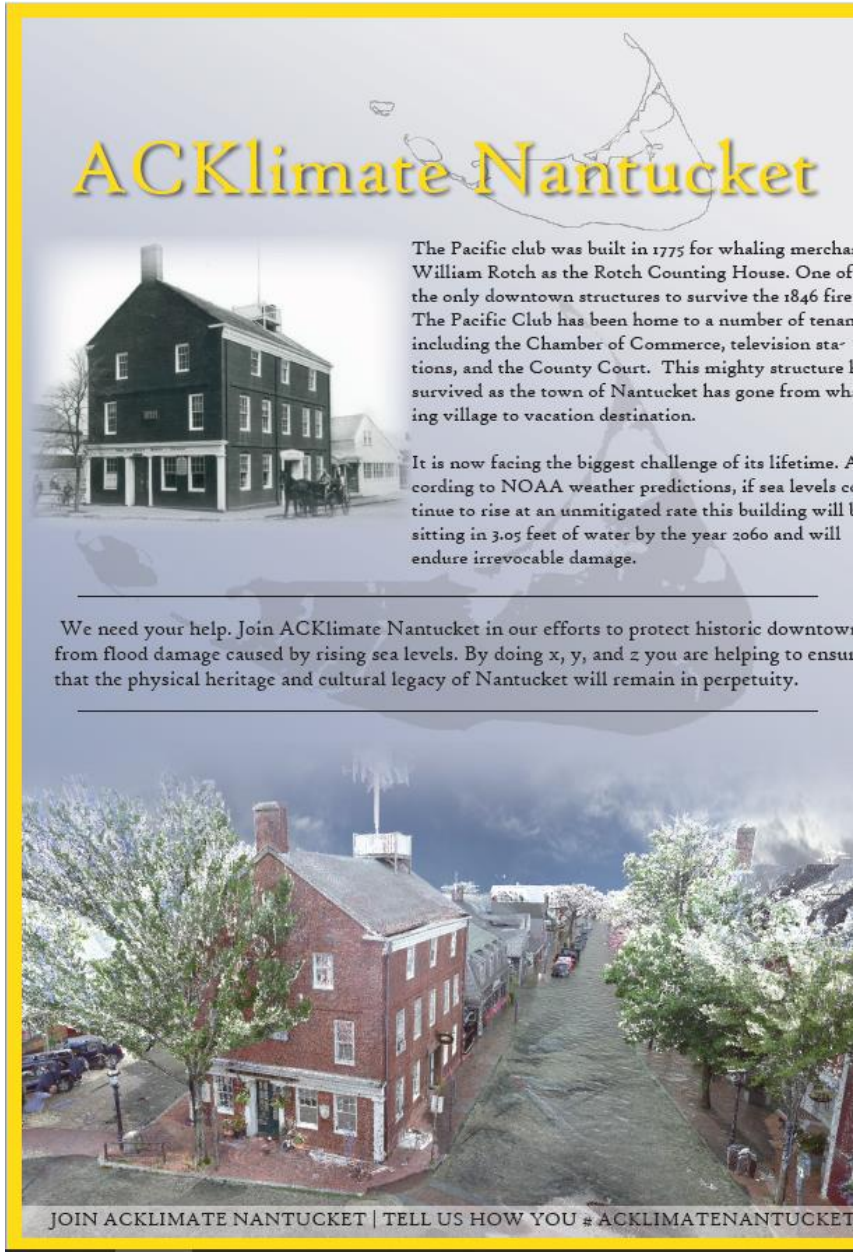
Resilient Nantucket

3D Digital Documentation and Sea Level Rise Visualization

Developed by the University of Florida's Preservation Institute Nantucket, this 3D Documentation program is supporting Community Resiliency Planning for the Town of Nantucket. Given the island's status as a National Historic Landmark District, the community has identified "preserving historical landmarks as a component of resilience planning."

"We recommend that the Town of Nantucket integrate resiliency and adaptation measures into the existing *Building with Nantucket in Mind: Guidelines for Protecting the Historic Architecture and Landscape of Nantucket."*

Historic Structure Signage



Partnership with Nantucket Historical Association or Nantucket Preservation Trust

Signage to include:

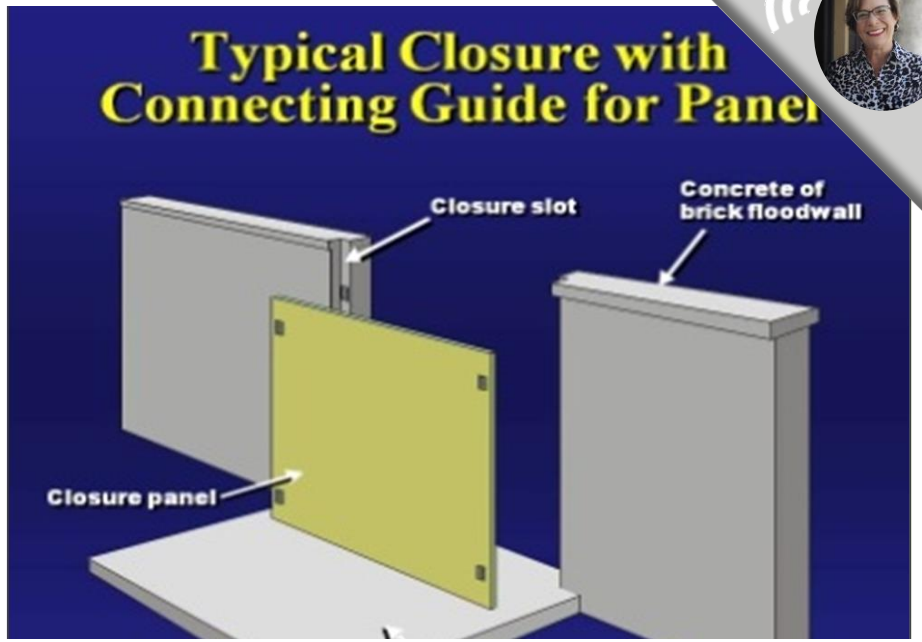
- Brief history and significance of structure
- Detail flood projections
- Resiliency measures (Call to Action)

Resilient Nantucket: Designed for Adaptation

The Craig Group, Thomason & Associates and Preservation Institute Nantucket are assisting the **Town of Nantucket** through a Massachusetts Municipal Vulnerability Preparedness (MVP) grant to develop a public awareness toolkit on adaptation strategies for private property owners and Design Guidelines for the Town of Nantucket's National Historic Landmark District.

Secretary of the Interior's Guidelines on Flood Adaptation for Historic Rehabilitation

- Temporary Protective Measures
- Site and Landscape Adaptations
- Protect Utilities
- Dry Floodproofing
- Wet Floodproofing
- Fill the Basement
- Elevate on a New Foundation
- Elevate the Interior Structure
- Abandon the First Story
- Move the Historic Building



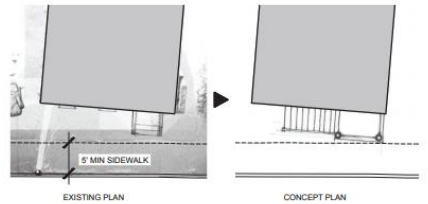
Building Specific Flood Adaptation Strategies
Summer Garden Theater: Annapolis

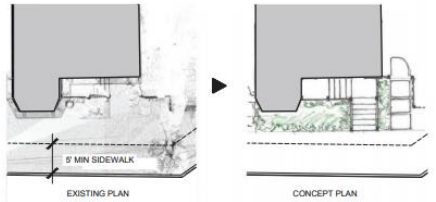
Temporary Protection
Protect Utilities
Dry Floodproofing

Case Studies: Designing For Elevation

"It is the opinion of the City and SHPO that preserving the Historic District fully in-tact is secondary to preserving the buildings and neighborhood, which opens the option for elevating, moving, and otherwise altering these buildings. If the buildings are not flood mitigated, they will become unlivable…The goal is to preserve lives and social interactions, not just the historic condition of buildings."

Schenectady, NY
Stockade Historic District Flood Mitigation Design Guidelines

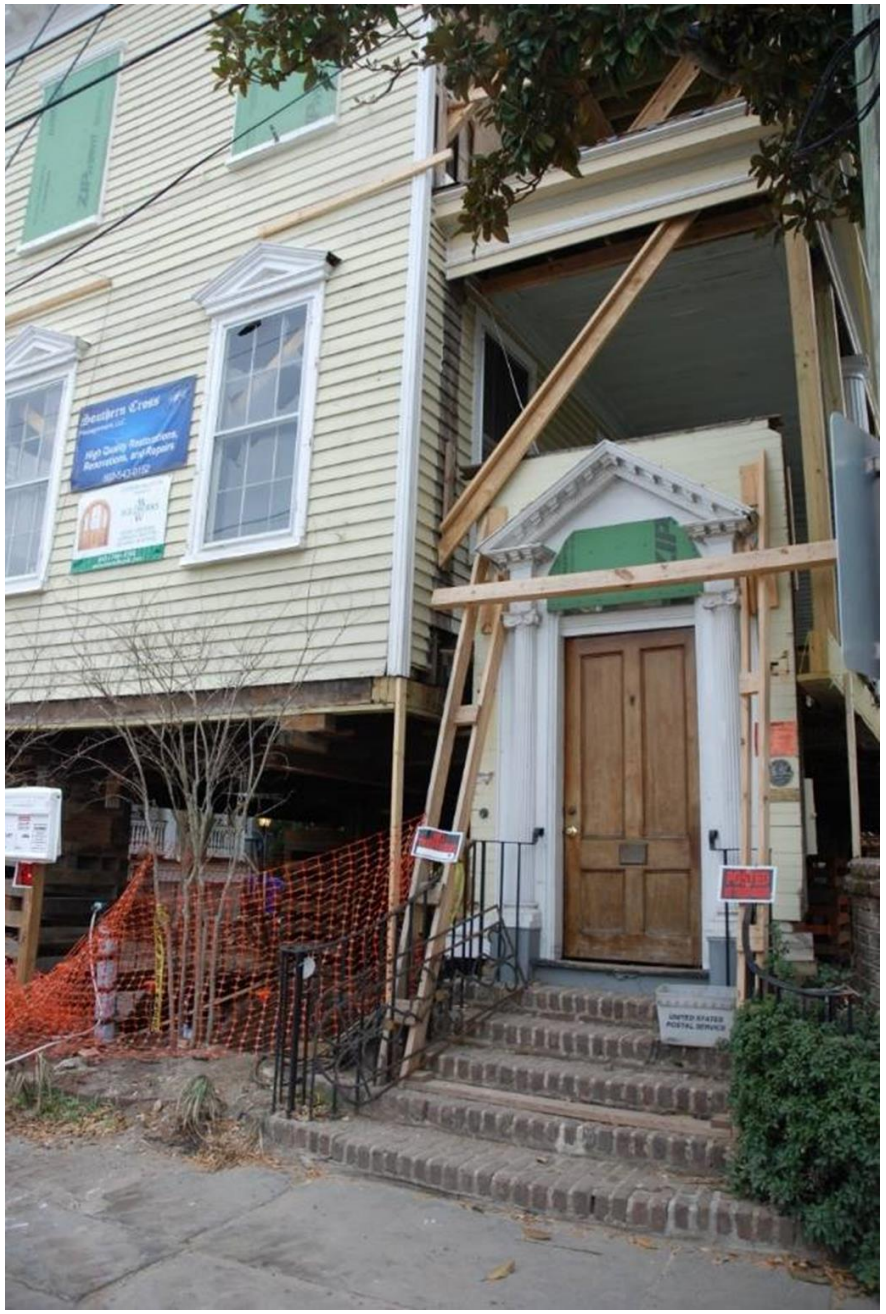




Successful design solutions respond to the unique qualities and constraints of each property, such as architectural character, orientation, proximity to the street, and the extent that it will be elevated.

Building Types: Charleston

Adjoined Buildings
Sister Houses
Freedman's Cottages
Category 1 & 2 Buildings



Building Elevation: Charleston

Site Considerations
Preservation & Architectural Considerations
Foundation Design Considerations

Public Outreach Strategy

- **Internal coordination management**
- Public Outreach Strategy participants
  - Roles/responsibilities
- Public outreach process
  - Detailed outline of tasks/deliverables based on key project stages
- Stakeholder database
  - Storing house of contact information
  - Strategy/method of communication

- **Strong internal coordination ensures a successful community engagement strategy**
- **Education we're going to want to provide**
- **Input we're going to want to collect**

Public Outreach Strategy

- **Communications**
  - In-person (if possible)
    - Public meetings
    - Town Hall-type events
    - One-on-one meetings
    - Stakeholder interviews
  - Target different groups with different approaches

- **In-person outreach, if possible, provides more connection, more trust, and more synergy between the public and the project team**
- **As time is limited, this is typically reserved for key project stakeholders, in a more personal setting and for public meetings, where many people can come together to participate and provide feedback**

Public Outreach Strategy

- **Communications**
  - Digital (possibly preferable for the short-term)
    - Virtual meetings/engagement
    - Website
    - Presentations
    - Social media
    - Online survey
    - Press release
    - Phone interviews
    - QR code capability

- **Community engagement relies heavily on various forms of outreach**
- **We've been living in a digital age for decades. Now, thanks to COVID, our reliance on technology is more important than before**
- **Factoring numerous communication channels ensures your messaging is reaching more people in various demographics**

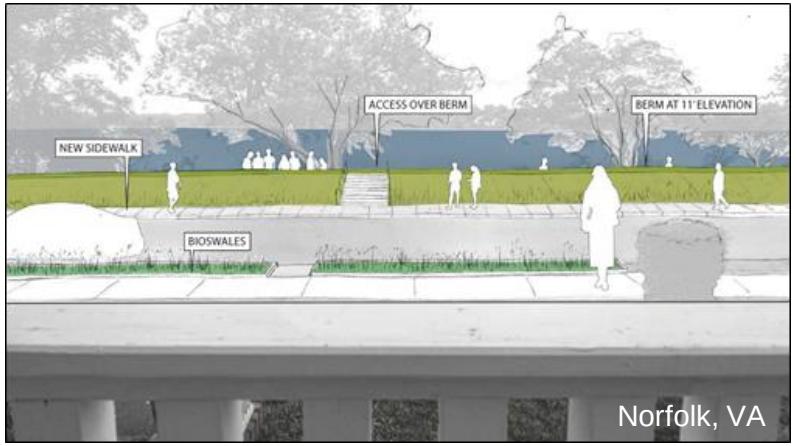
Public Outreach Strategy

- **Communications**
  - Print
    - Project Overview materials
      - Posters/flyers at designated key locations
        - Meeting announcements/relevant outreach details
        - Hardcopy surveys
        - Project information relayed to the public for educational purposes
        - Information kiosk

- **Community engagement relies heavily on various forms of outreach**
- **Print materials are important to consider especially for targeted groups that aren't technologically savvy or for those without technology access**
- **Locating printed material at key locations where the targeted groups are located will ensure those affected will be aware of the project's efforts**

Mitigation and Resilience Solutions

- **Coastal Flooding, Sea Level Rise and Riverine Inundation**
  - Living Shorelines
  - Building Elevation
  - Property acquisition
  - Small berms
  - Bulkhead/Floodwall
  - Flood gates
  - Pumping stations
  - Raised roadways



- **Specific types of solutions will be identified as data is analyzed and problem statements are developed**
- **Will also include recommendations for plans, policies, procedures, ordinances, guidelines, etc. that support flood mitigation**

Mitigation and Resilience Solutions

Coastal Flooding, Sea Level Rise and Riverine Inundation

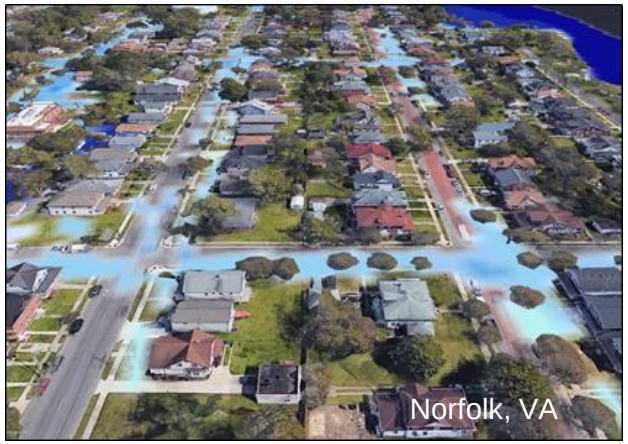

New York, NY


Elizabeth City, NC

- Solutions will range from easily achievable actions to more ambitious proposals

Mitigation and Resilience Solutions

- **Stormwater and Drainage**
  - Green infrastructure
  - Improved conveyance
  - Watershed detention volume


Norfolk, VA


Wake Forest, NC


New Orleans, LA

- **Solutions will balance reduced risk from natural hazards while improving the economic, social, and environmental health of the planning area**

Community Rating System (CRS) Activities

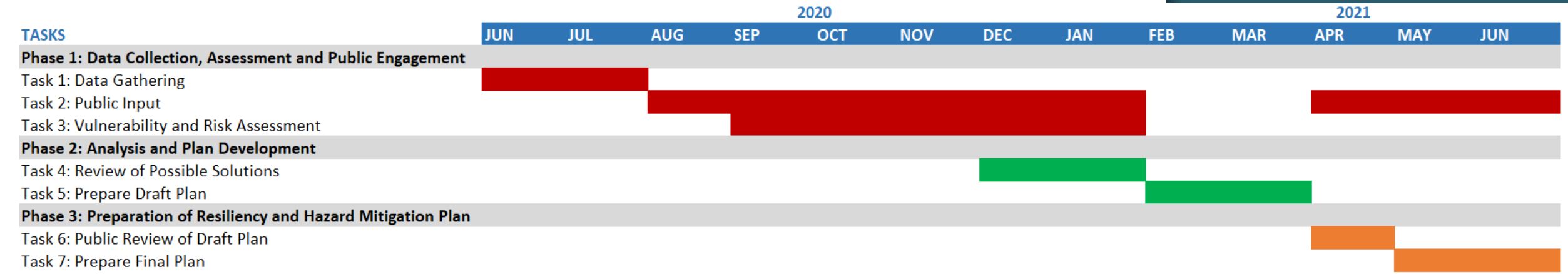
300 Public Information Activities	
310	Elevation Certificates
320	Map Information Service
330	Outreach Projects
340	Hazard Disclosure
350	Flood Protection Information
360	Flood Protection Assistance
370	Flood Insurance Promotion
400 Mapping and Regulations	
410	Flood Hazard Mapping
420	Open Space Preservation
430	Higher Regulatory Standards
440	Flood Data Maintenance
450	Stormwater Management
500 Flood Damage Reduction Activities	
510	Floodplain Management Planning
520	Acquisition and Relocation
530	Flood Protection
540	Drainage System Maintenance
600 Warning and Response	
610	Flood Warning and Response
620	Levees
630	Dams
700 Community Classification Calculations	
710	County Growth Adjustment
720	Community Total Points

- **Efforts that could earn credit in the CRS include**:
  - Open green spaces (CRS Activity 420)
    [2013 Parks & Rec Comp. Plan]
  - Disaster case management linking resources and families (CRS Activity 330)
    [Craven County Long Term Recovery Group]
  - Resources such as “Be Prepared” like signing up for CodeRed Emergency Notification System and ReadyNC.org; making a plan like Red Cross Ready; staying informed and sheltering in place like having an emergency supply kit
    (CRS Activity 610)
    [Craven County Long Term Recovery Group]
  - Code of Ordinances – Chapter 18 – Floods
    (CRS Activity 510 and 530)

Taken from the 2017 CRS Coordinators Manual 508

- **New Bern is in the process of establishing itself as a CRS community under the NFIP**
- **This would lead to discounts in flood insurance premiums for property owners**
- **Currently at Level 10**
- **Initial goal expressed is to reach at least Level 8 if possible**

Schedule



- Some tasks will be done concurrently
- Some tasks depend upon outcomes of previous tasks
- Public input will be collected throughout most of the process

Project Outcomes

- City of New Bern Hazard Mitigation and Resiliency Plan Document
- One year AccelAdapt access to interactive vulnerability assessment for ongoing review/application

- **Outlining for the plan document has already started**
- **Will include a variety of sections that support flood mitigation and resiliency**
- **Many times the process used to develop a plan is as important as the plan itself**

Roles and Responsibilities

- Monthly planning team meetings
- Participation in larger stakeholder meetings
- Interaction with public engagement as appropriate
- Review of draft work products
  - Maps, tables, narrative write-ups, etc.
- Collaboration with local GIS manager for AccelAdapt

- **Data collection and validation/confirmation**
- **Rule setting for analyses**
- **Historical hazard occurrences and personal observations**
- **Departmental mindsets and priorities**

Next Steps

- Monthly planning team calls
- Public involvement
- Stakeholder engagement

- **Monthly calls will be a combination of status updates and focused discussion on specific topics**
- **Public involvement will be virtual for the time being**
- **Stakeholder engagement meetings will be scheduled to discuss preliminary vulnerability assessment findings, draft resiliency solutions, etc.**

Open Discussion

- *Questions about the material presented today*
- *Thoughts and input for moving forward*
- *Specific expectations for the project outcomes*

- **We will start with any questions that came in via the Chat box**

THANK YOU

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