Resilient Hampton

HAMPTON VIRGINIA

RESILIENT HAMPTON

Local Government Leadership Workgroup
March 5, 2026

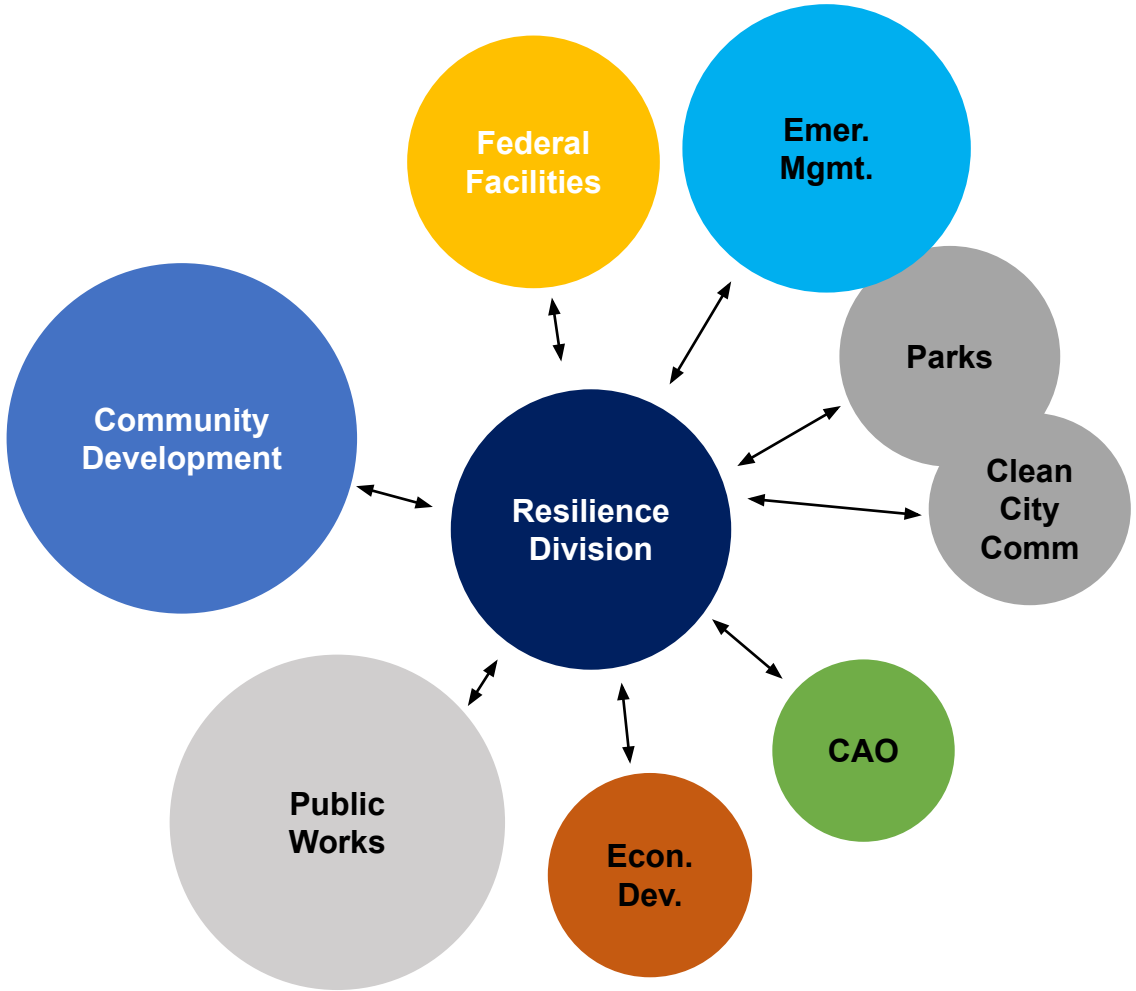
Topics we'll cover:

- Who is the Resilient Hampton Team?
- Why does the team exist?
- What does the team do?
- How should you interact with us?

Anything else you want to know?

Who?

Resilient Hampton Team Structure



City Manger's Office
City Manager
Assistant City Manager
Strategic Priority Leader

Community Development Department
Director

Resilience Division
Resiliency Officer
Resiliency Specialist
(Resiliency Specialist)
Coastal Resilience Engineer

Partners

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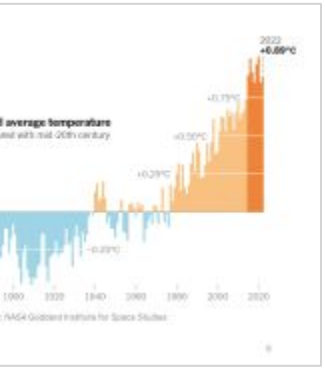
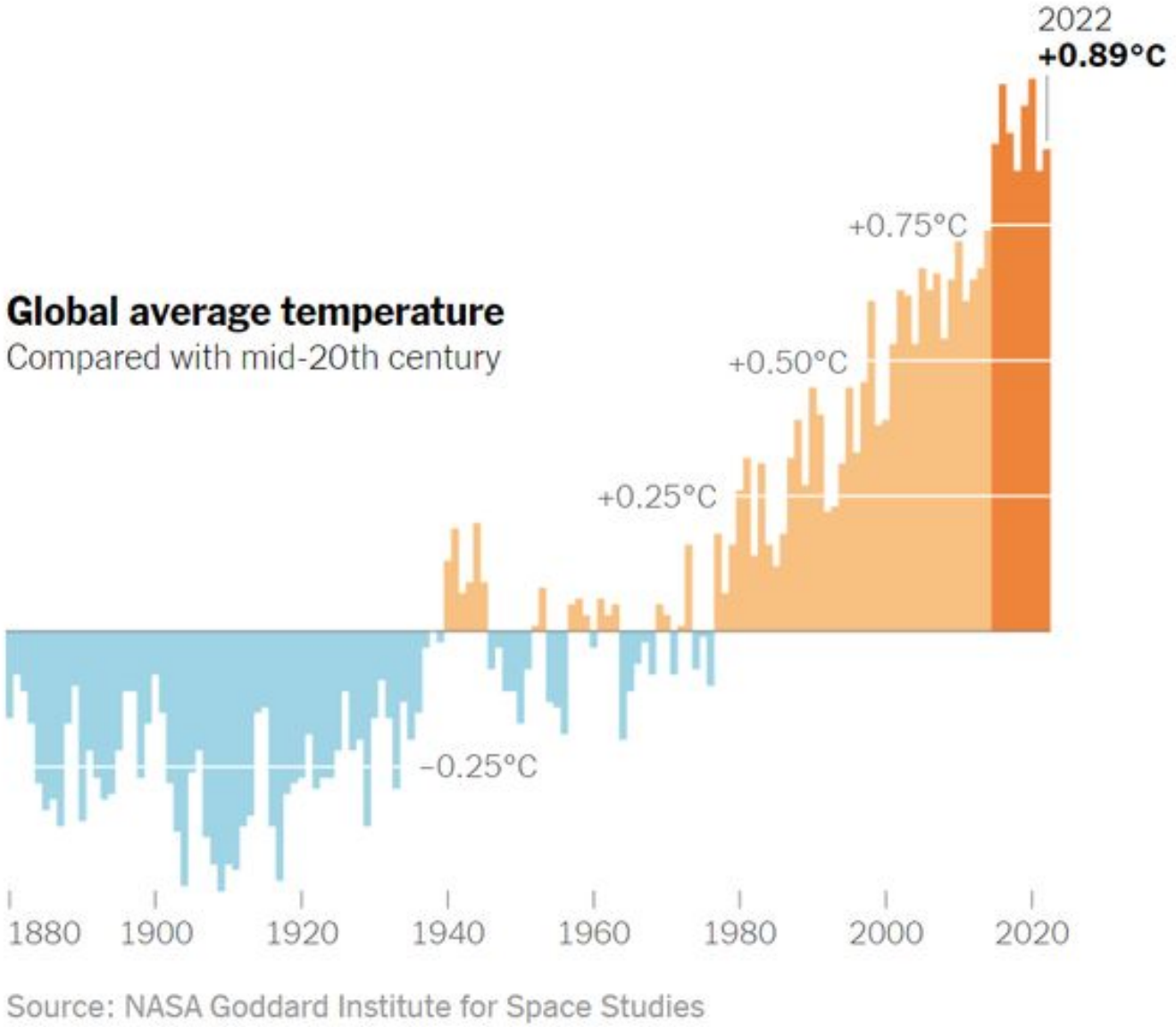
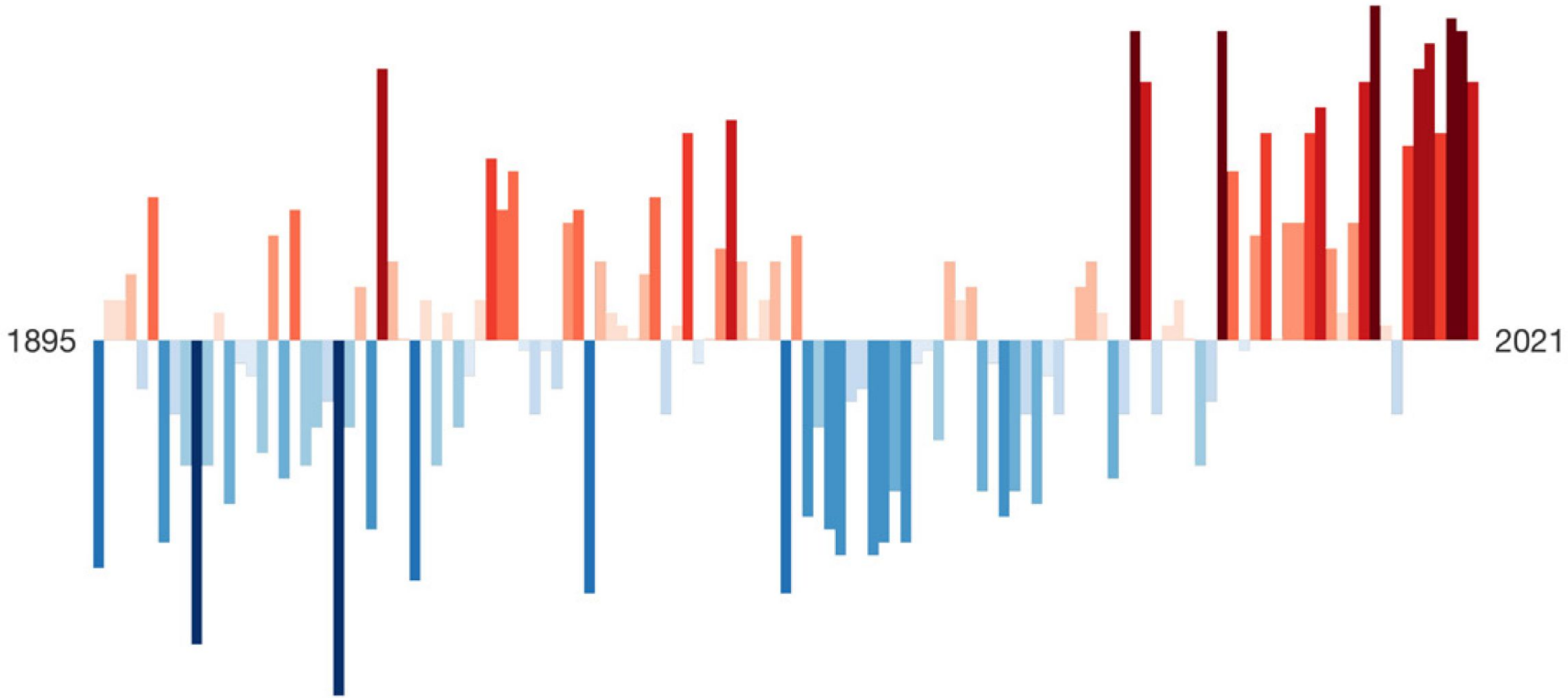
Why?

Climate Change

A change in the average conditions in a region over a long period of time







Temperature Deviations in Virginia, 1895-2021

The above graphic shows yearly temperature and precipitation change relative to NOAA average of 1971-2000.

Ed Hawkings, University of Reading

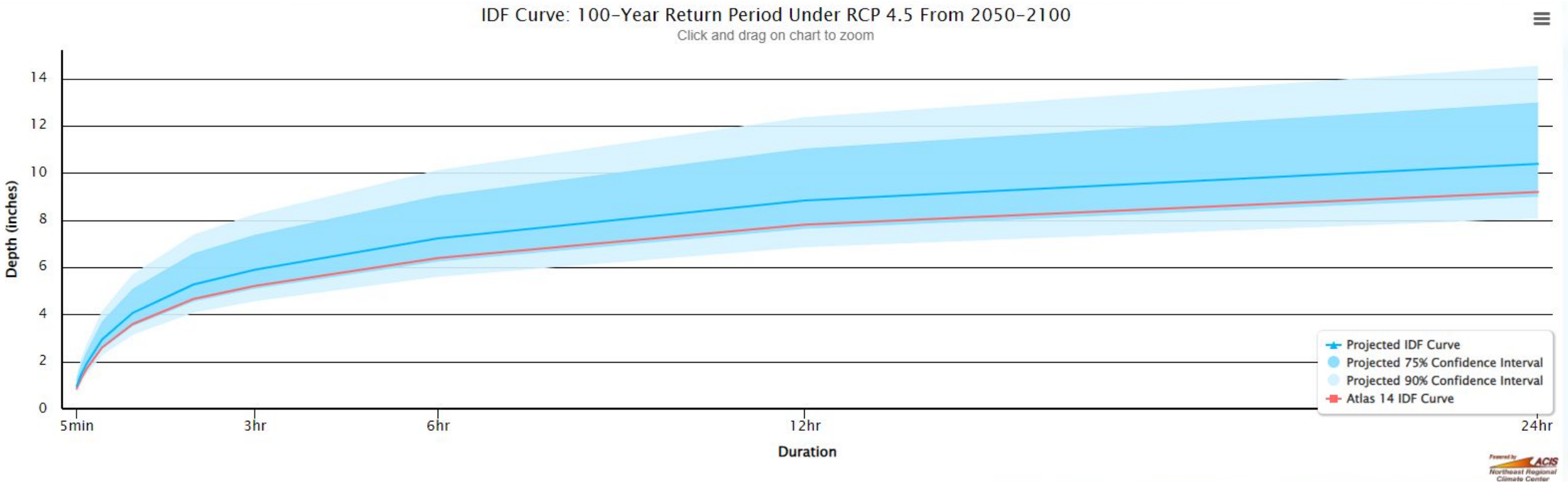
Higher Average Global Temperatures Mean…

MORE INTENSE, FREQUENT RAINFALL EVENTS

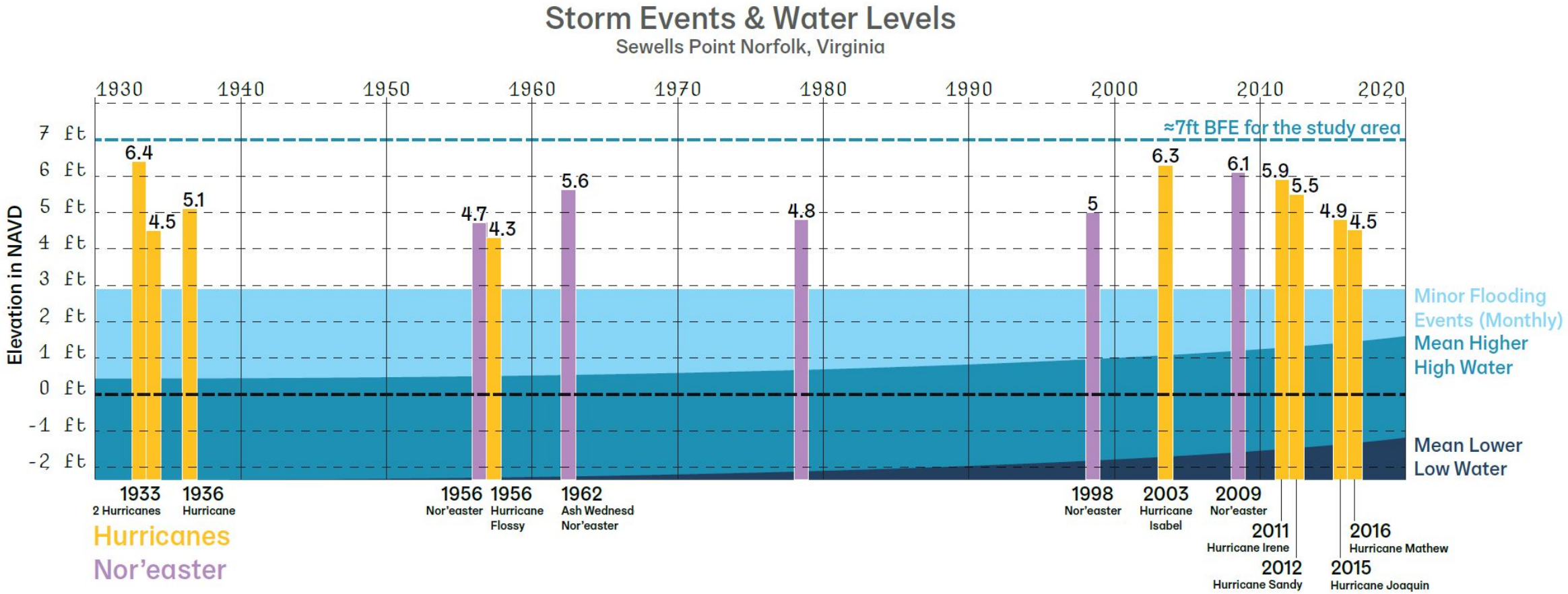
MORE POWERFUL STORM EVENTS

HIGHER SEA LEVELS

Rainfall Intensity, Duration & Frequency

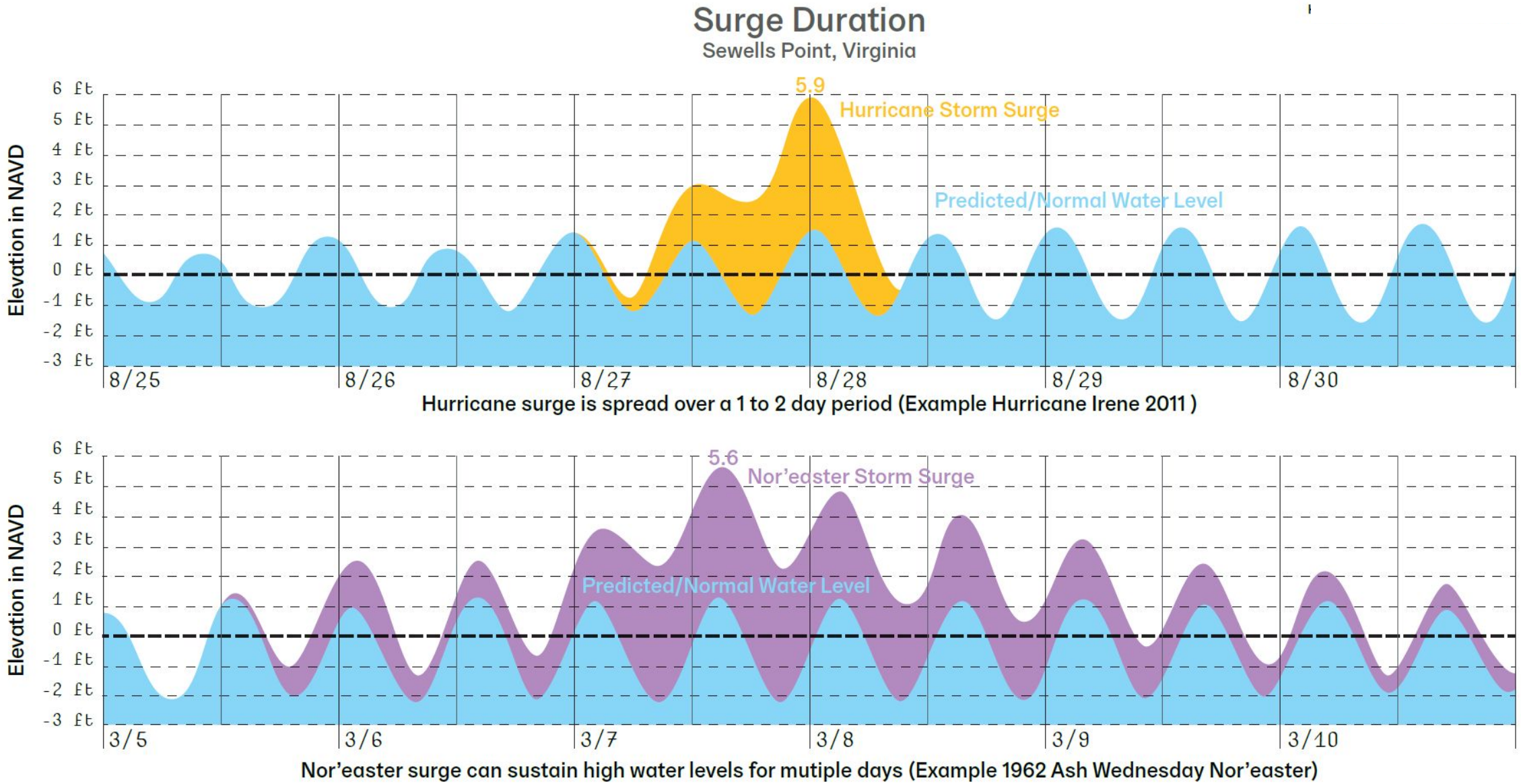


Increasingly more powerful coastal storms.



Storm Events & Water Levels

The above graphic shows water levels during major storm events documented in the FEMA Flood Insurance Rate Study with some additional recent storm events


Surge Duration
Sewells Point, Virginia
Elevation in NAVD
6 ft
5 ft
4 ft
3 ft
2 ft
1 ft
0 ft
-1 ft
-2 ft
-3 ft
5.9
Hurricane Storm Surge
Predicted/Normal Water Level
8/25
8/26
8/27
8/28
8/29
8/30
Hurricane surge is spread over a 1 to 2 day period (Example Hurricane Irene 2011)
Elevation in NAVD
6 ft
5 ft
4 ft
3 ft
2 ft
1 ft
0 ft
-1 ft
-2 ft
-3 ft
5.6
Nor'easter Storm Surge
Predicted/Normal Water Level
3/5
3/6
3/7
3/8
3/9
3/10
Nor'easter surge can sustain high water levels for mutiple days (Example 1962 Ash Wednesday Nor'easter)

Rising Tides

(Sea Level Rise)

+

Sinking Land

(Subsidence)

=

Relative Sea Level

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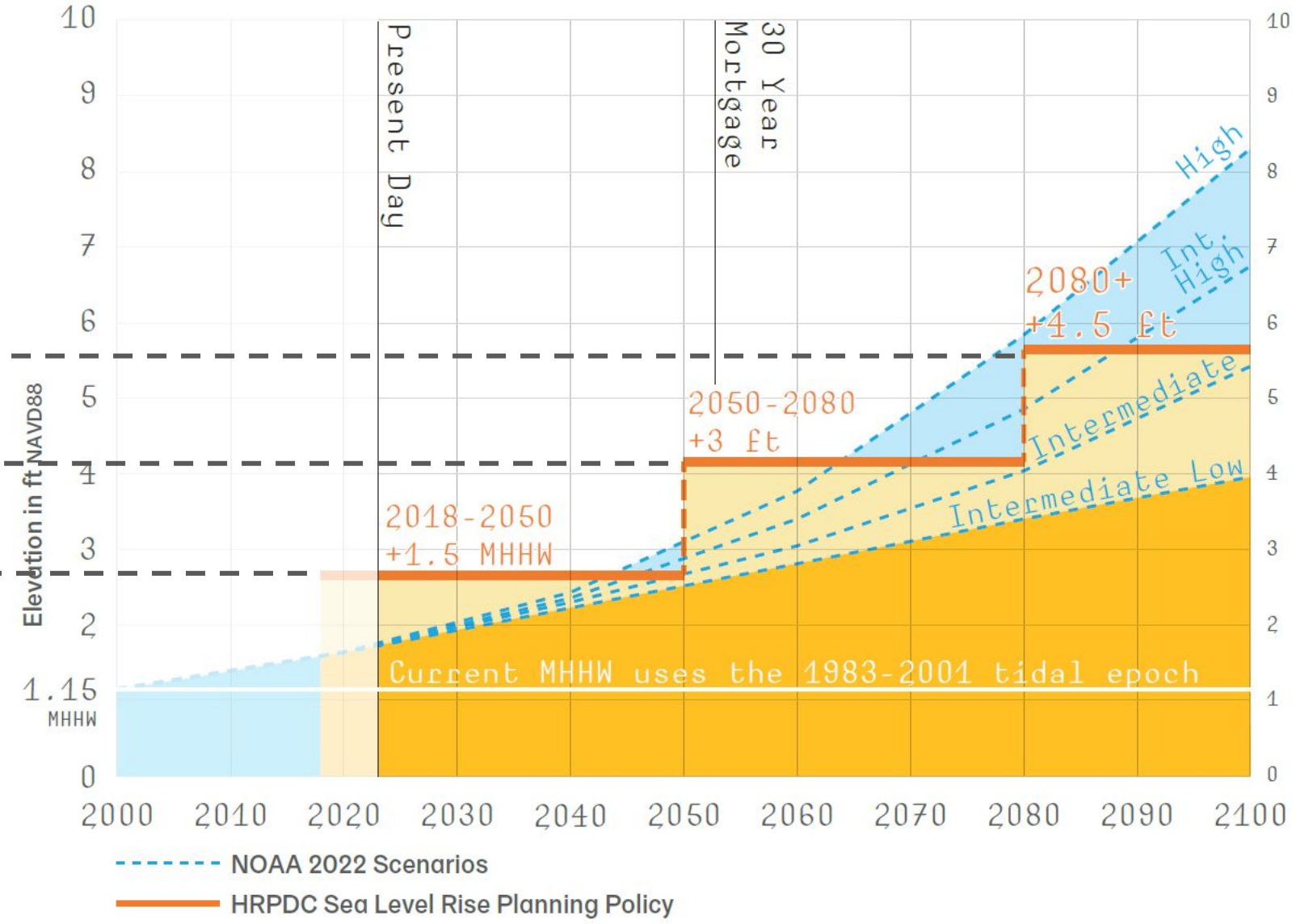
Higher sea levels.

Sea Level Rise Planning Horizons
Hampton Roads Planning District Commission
Sea Level Rise (SLR) Planning Policy with NOAA SLR 2022 Scenarios.

+4.5 Feet by 2100

+3.0 Feet by 2080

+1.5 Feet by 2050



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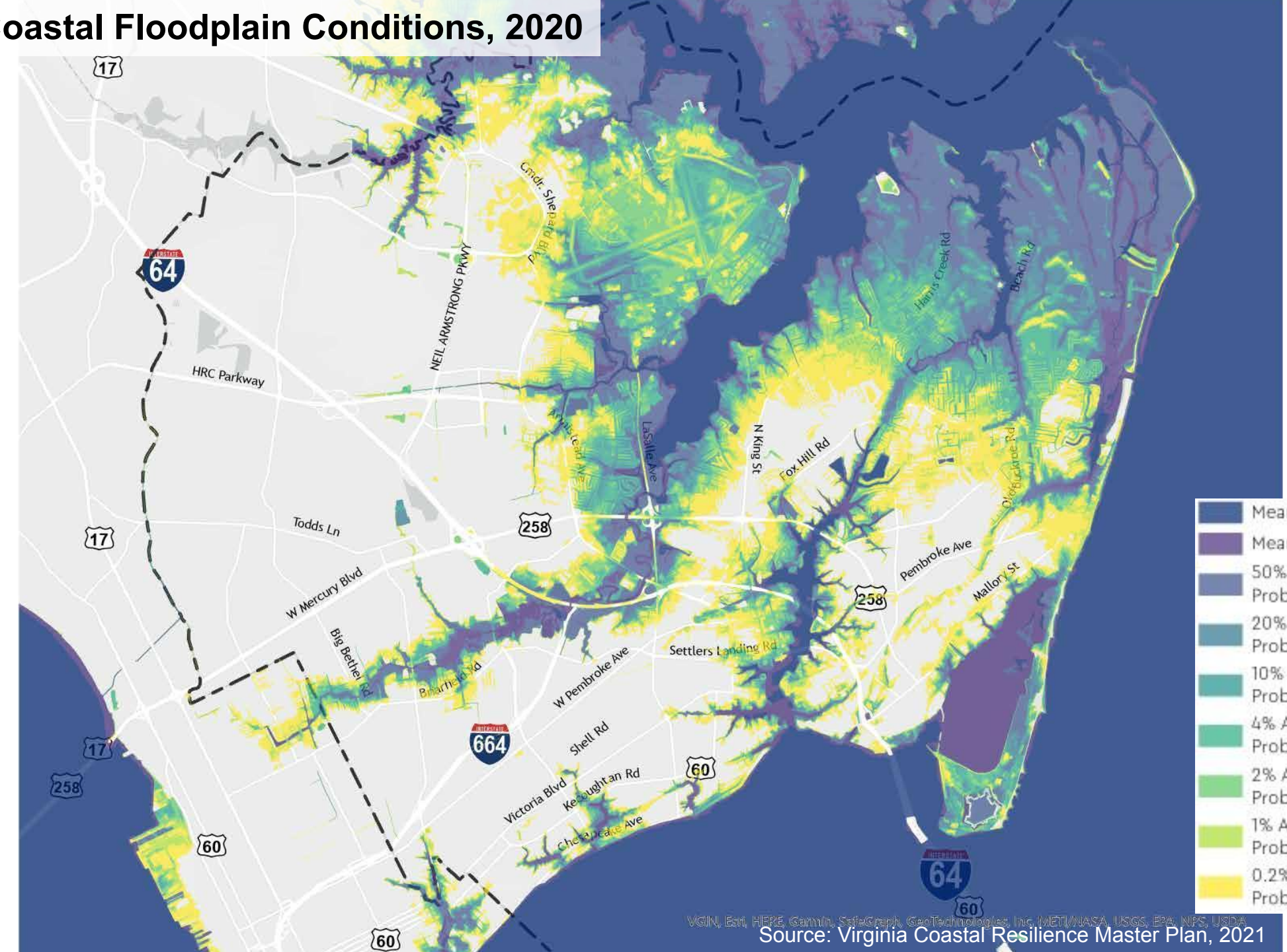
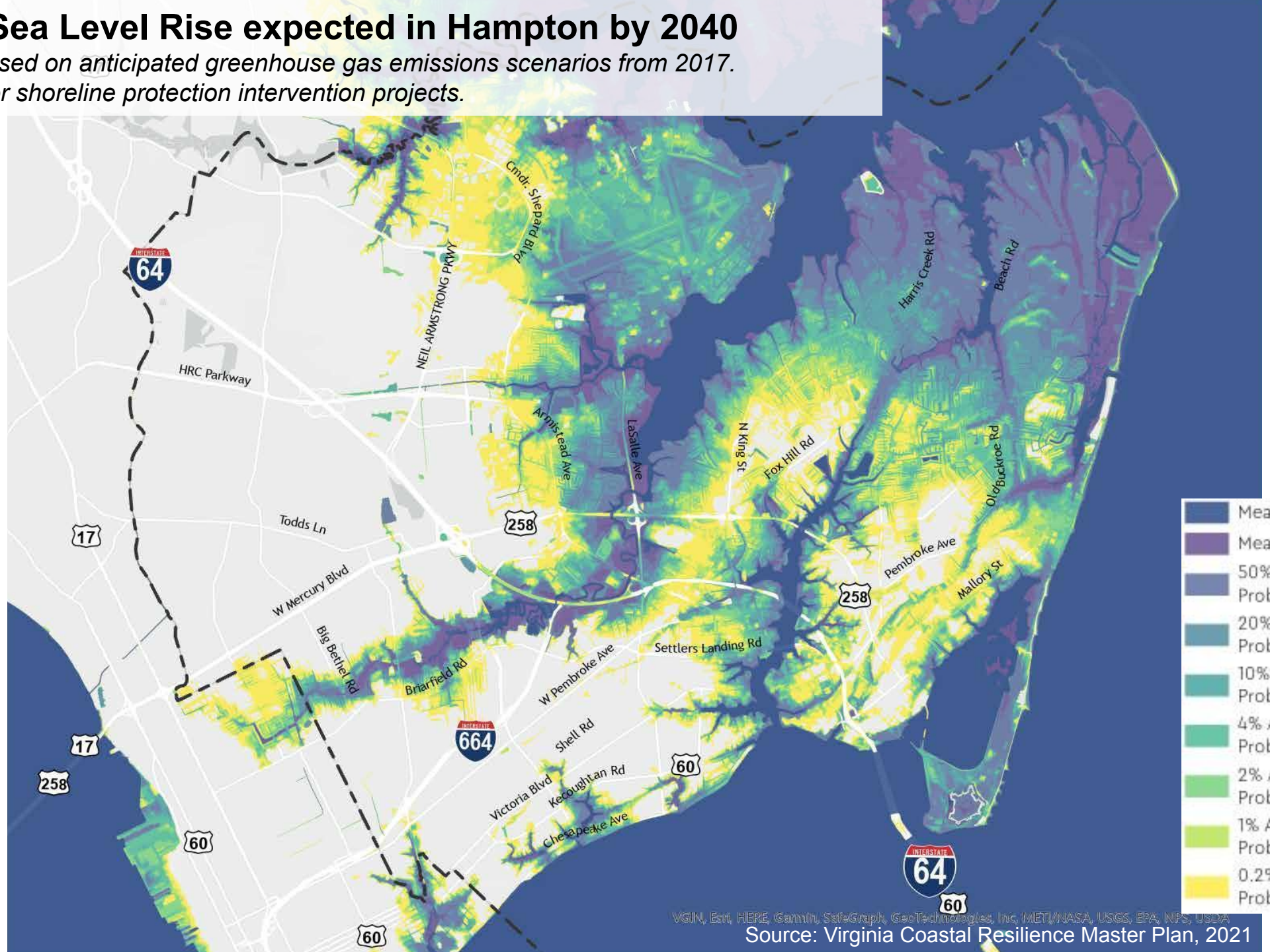
Hampton Coastal Floodplain Conditions, 2020



Source: Virginia Coastal Resilience Master Plan, 2021

Impacts of Sea Level Rise expected in Hampton by 2040

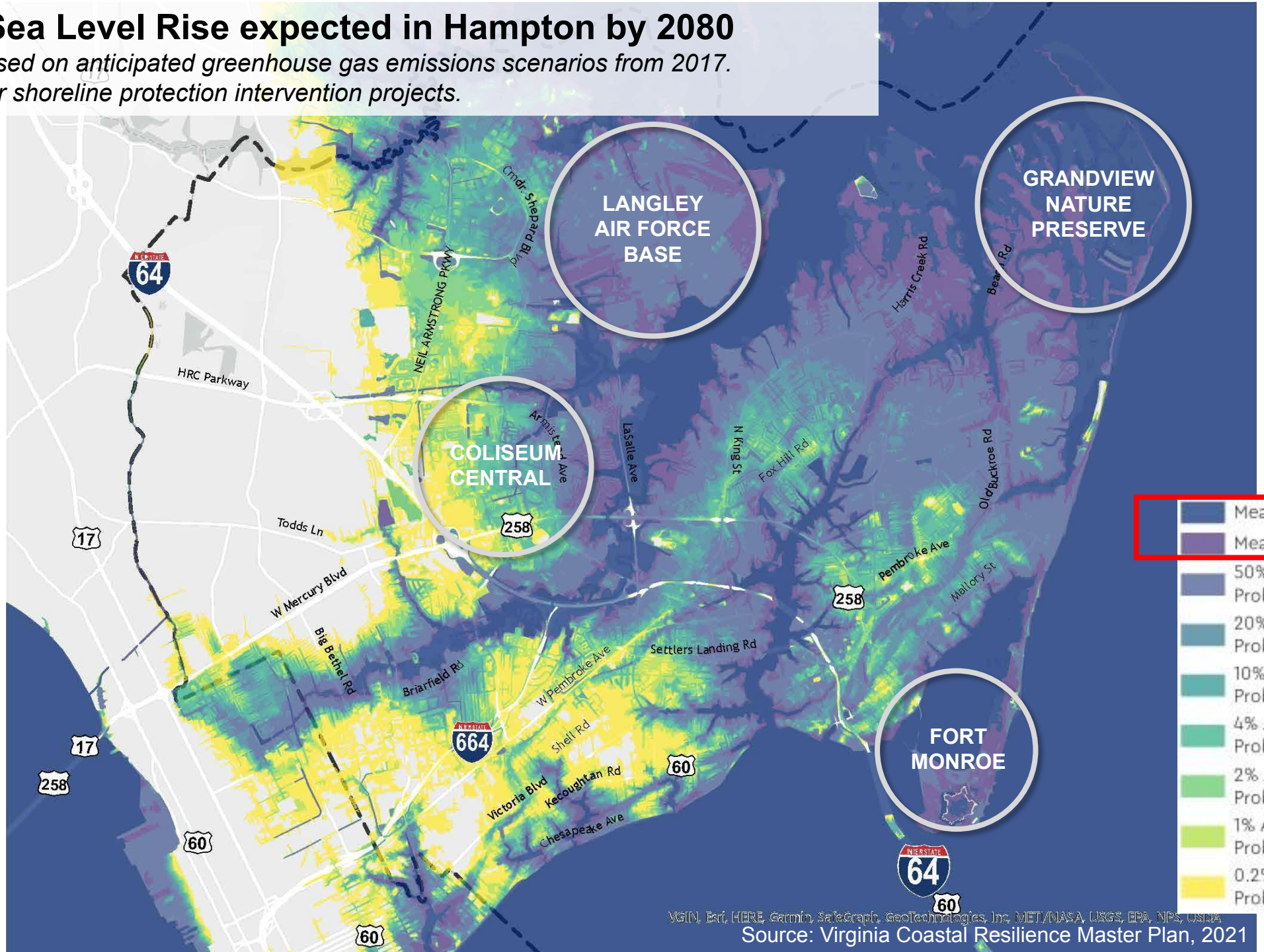
Likely scenario based on anticipated greenhouse gas emissions scenarios from 2017.
Does not model for shoreline protection intervention projects.



Source: Virginia Coastal Resilience Master Plan, 2021

Impacts of Sea Level Rise expected in Hampton by 2080

Likely scenario based on anticipated greenhouse gas emissions scenarios from 2017.
Does not model for shoreline protection intervention projects.



Source: Virginia Coastal Resilience Master Plan, 2021

Climate Change

Sea Level Rise

&

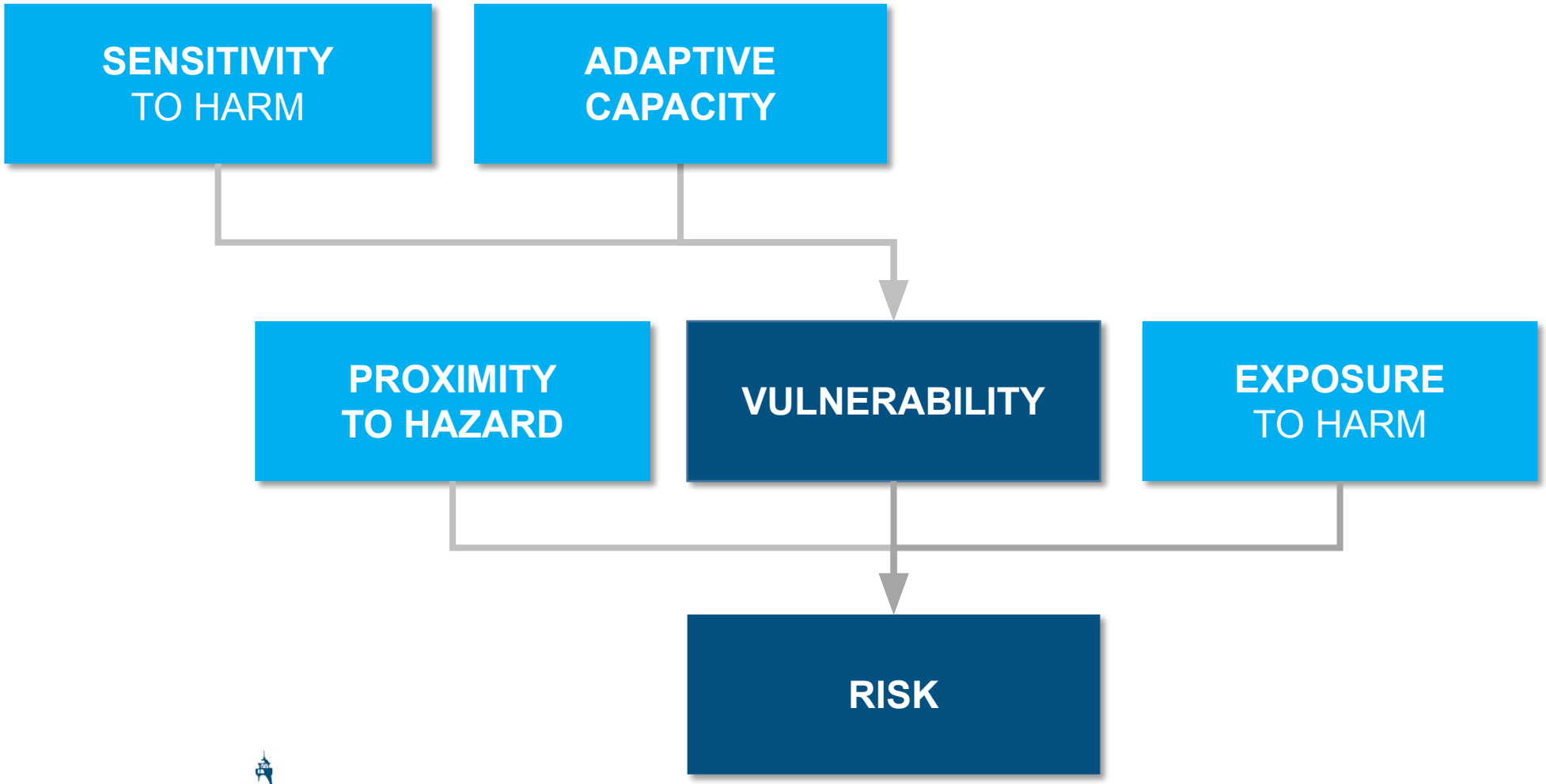
Increasingly Powerful & More Frequent Storms

2022: “Sunny” Day Flooding

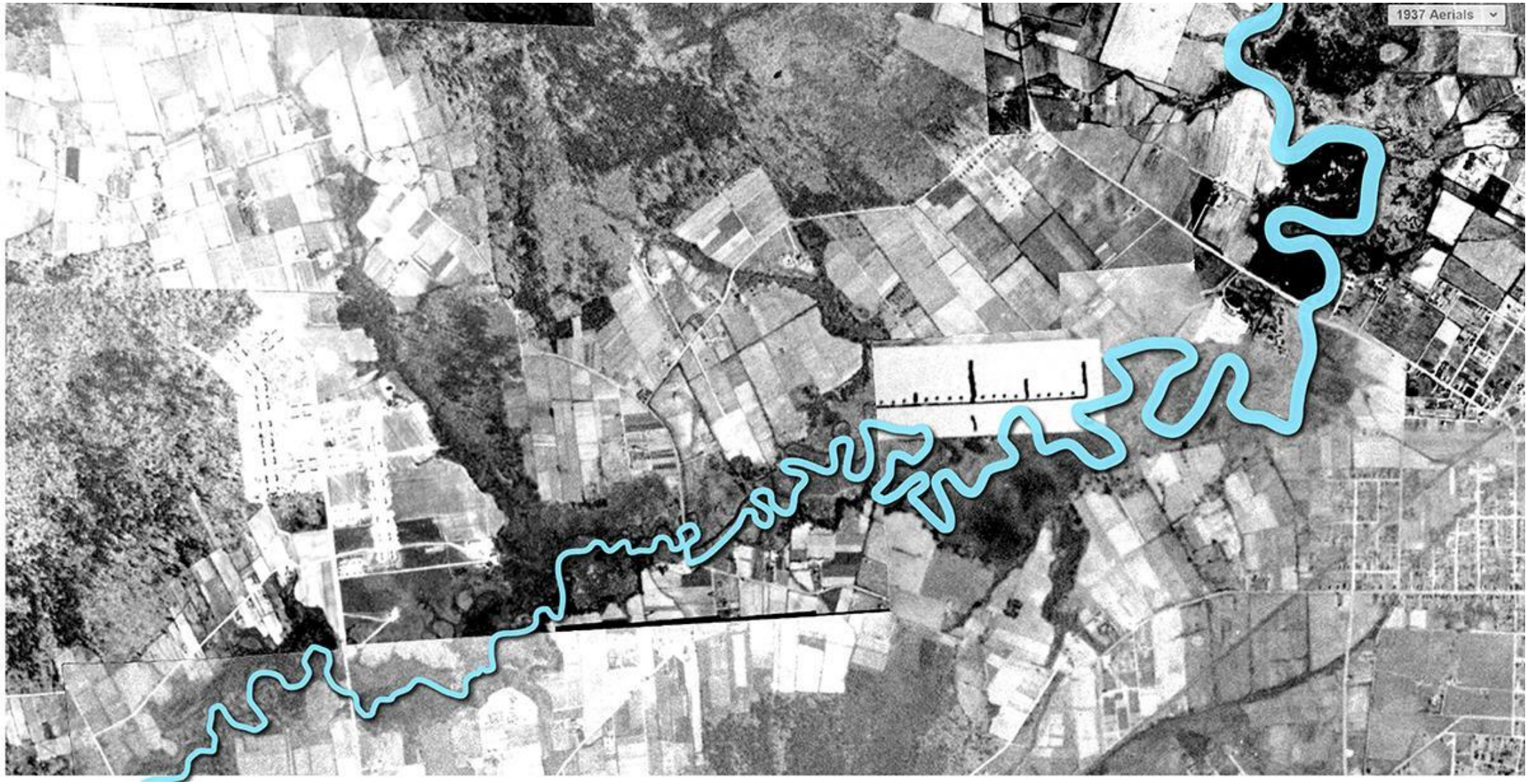
October 2023: “Minor” Tidal Flooding

Over time, the ways we have built our cities have put individuals at risk.

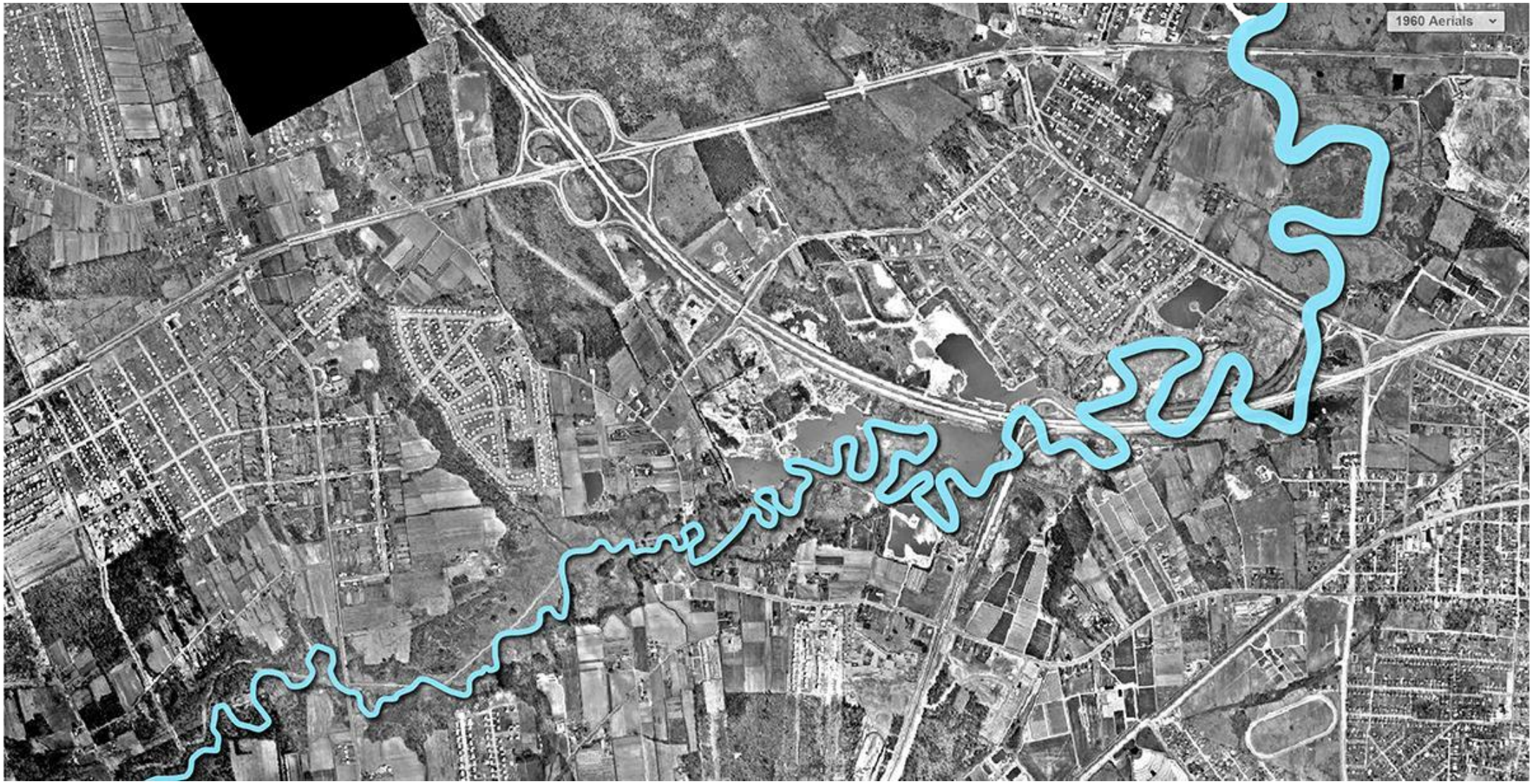
Climate change doesn't impact everyone the same.



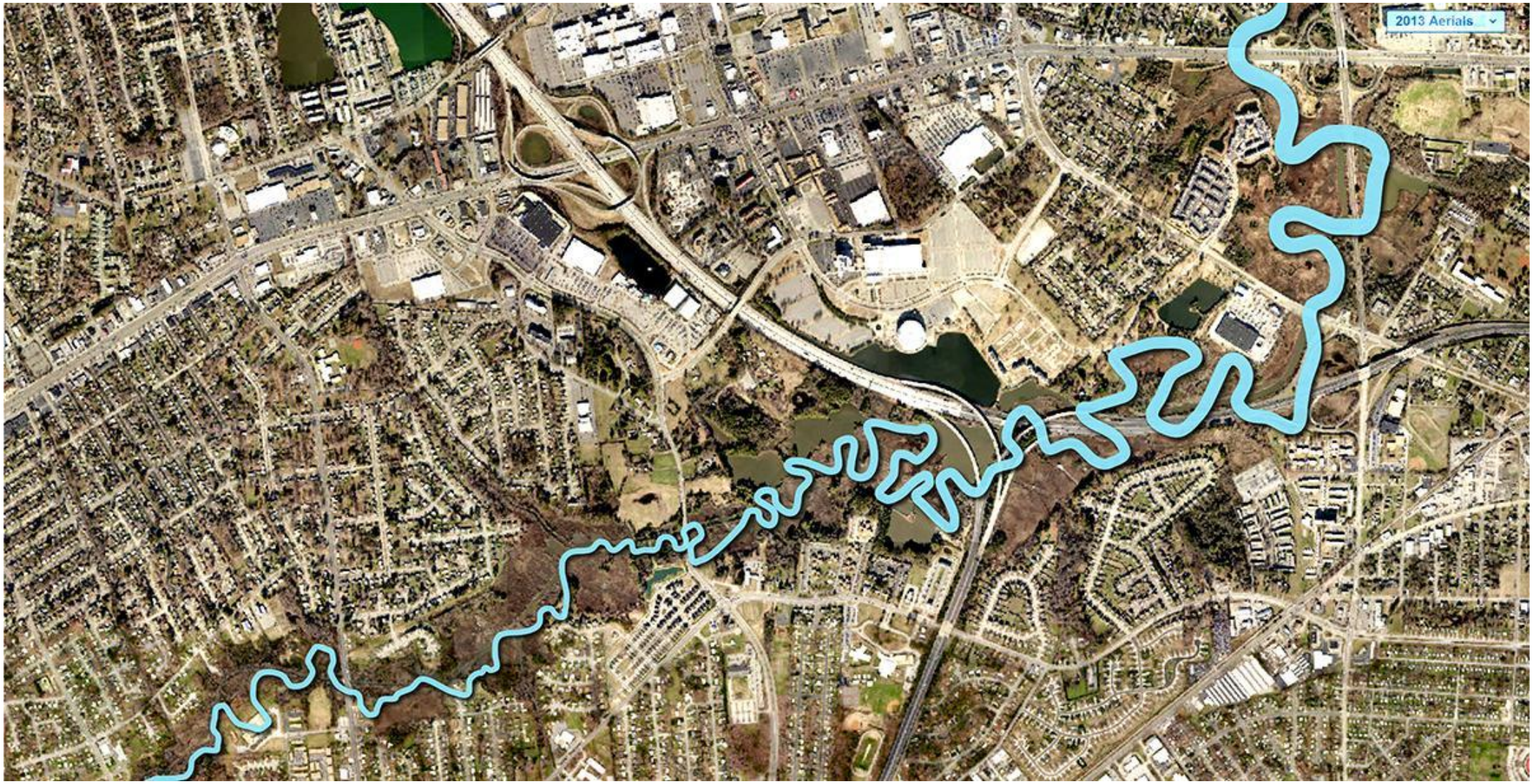
Newmarket Creek in 1937



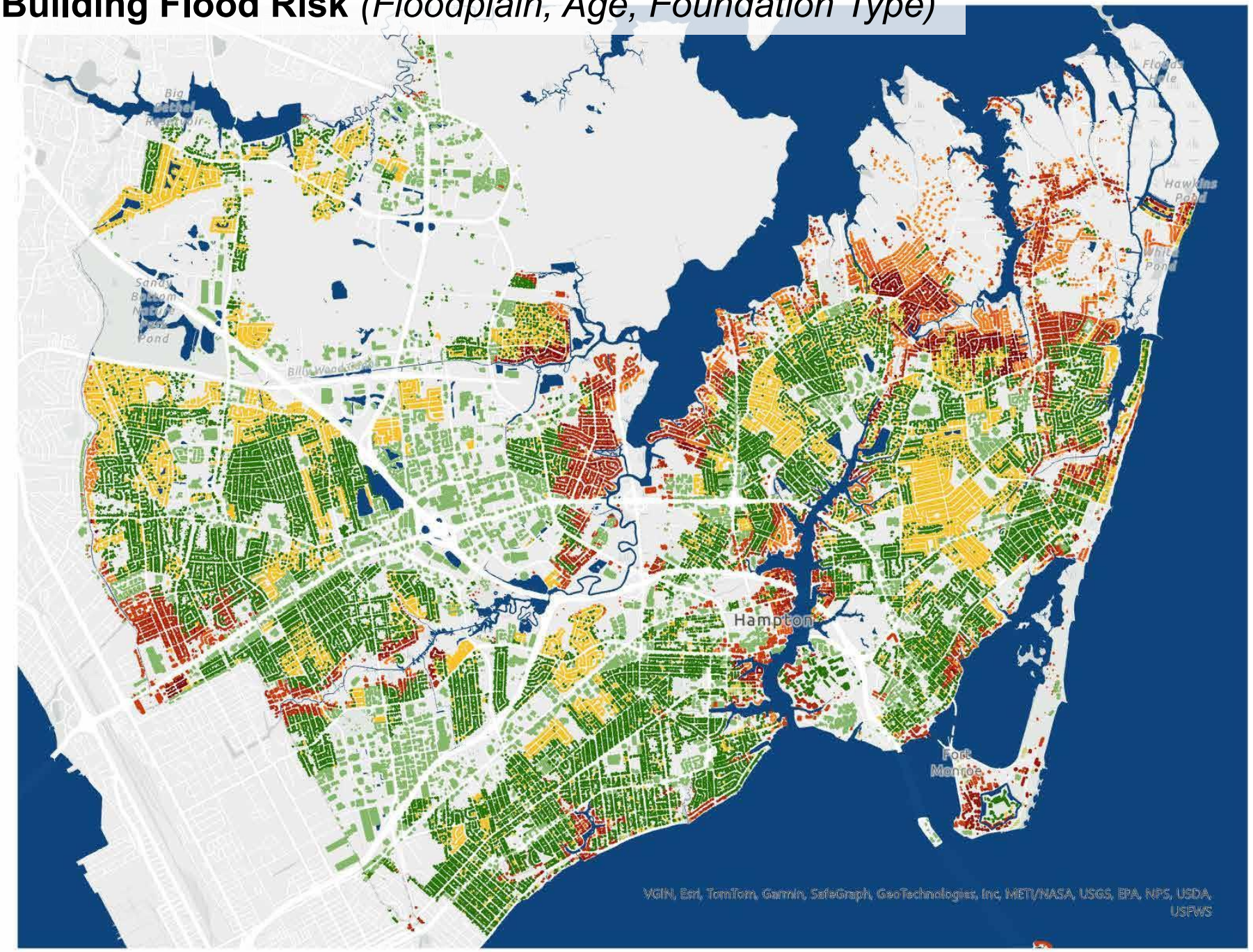
Newmarket Creek in 1960



Newmarket Creek in 2013



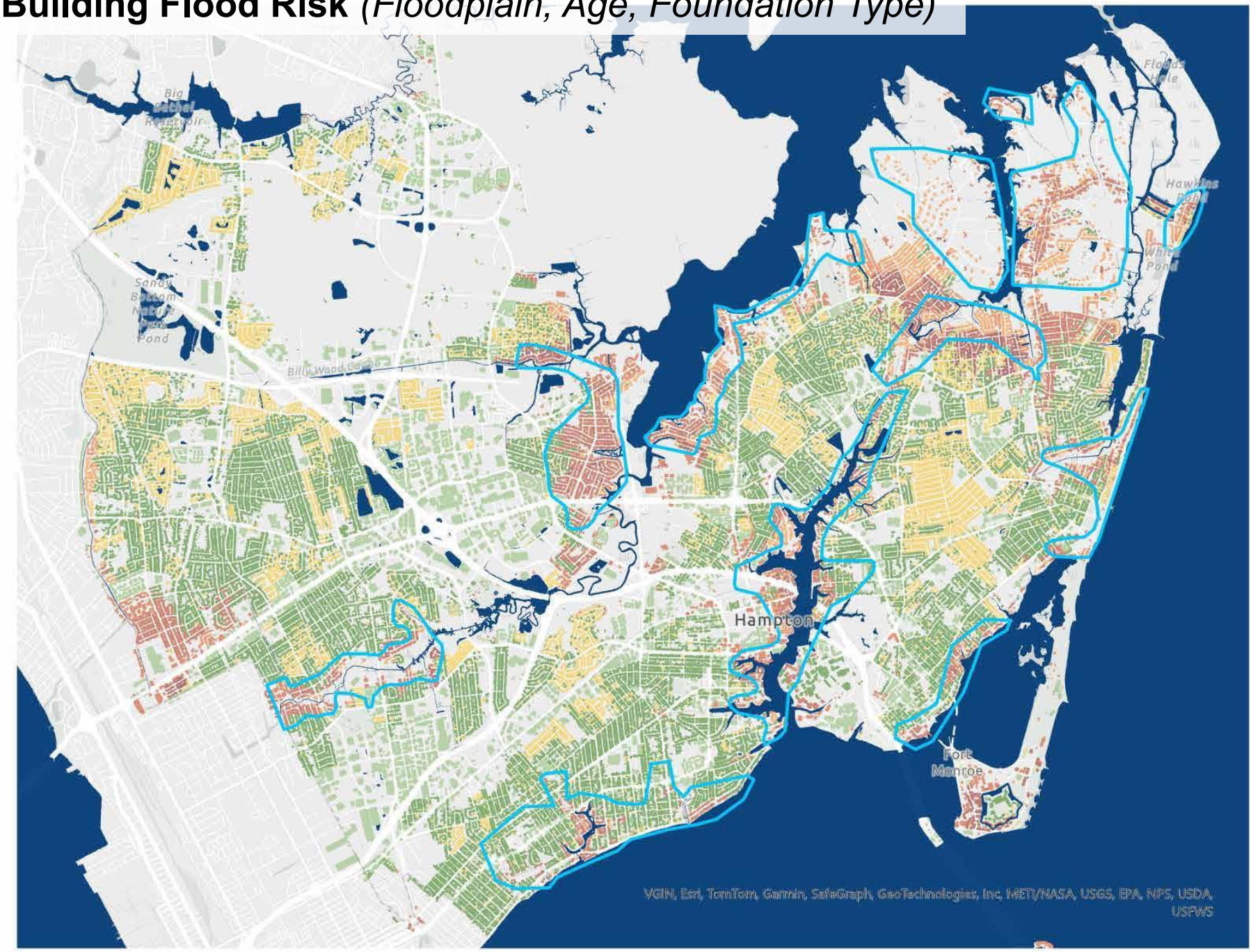
Building Flood Risk *(Floodplain, Age, Foundation Type)*



LEGEND

	Raised	Slab-on-grade, Basement or Unknown
Outside of the Floodplain	Lowest Risk	Lower Risk
Inside of the Floodplain, Built *after* Floodplain FIRM adoption (1975)	Moderate Risk	Moderate Risk
Inside of the Floodplain, Built *before* Floodplain FIRM adoption (1975)	Higher Risk	Highest Risk

Building Flood Risk *(Floodplain, Age, Foundation Type)*



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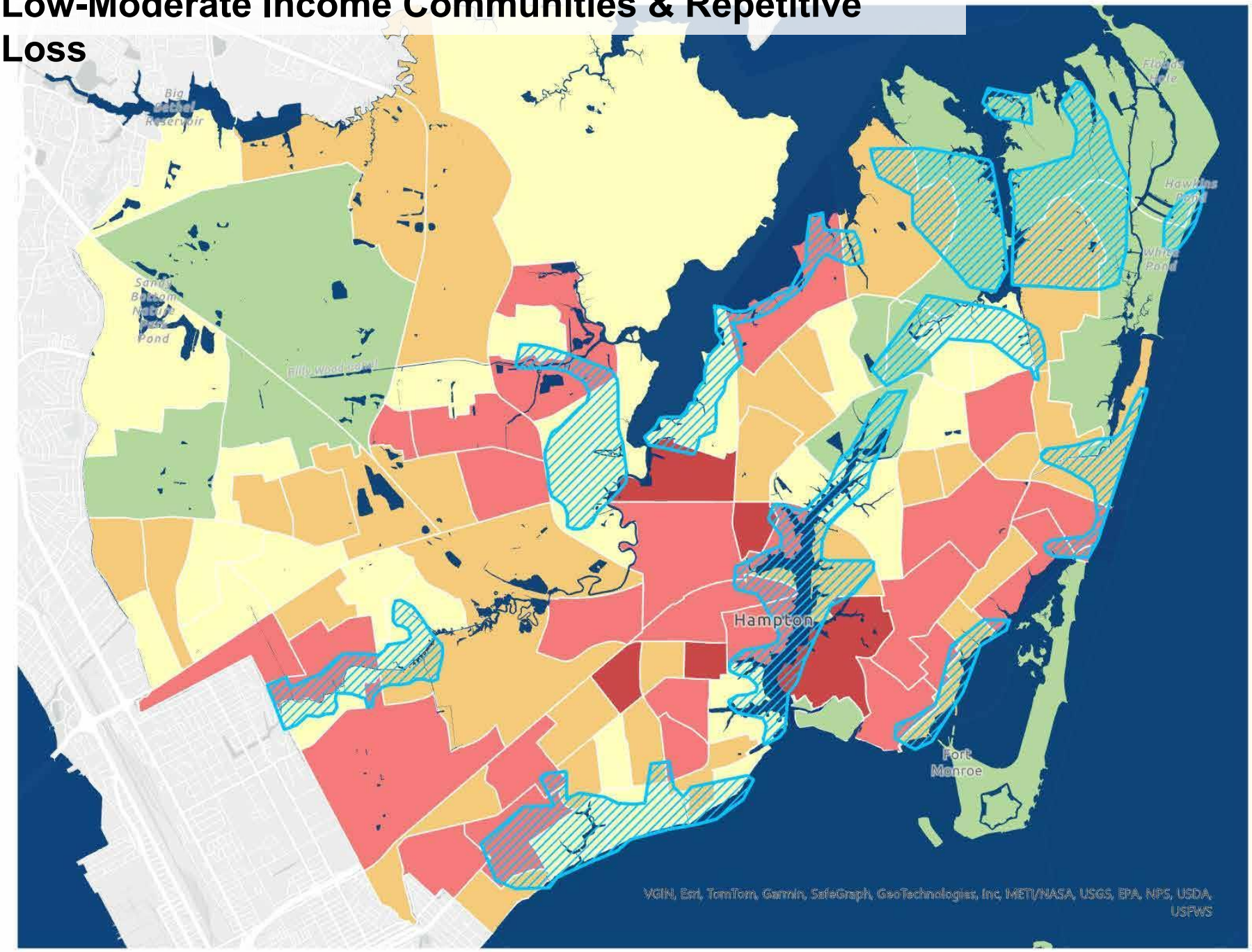
NFIP Areas of Repetitive Loss

Repetitive Loss Clusters

Low-Moderate Income Communities & Repetitive Loss



LEGEND

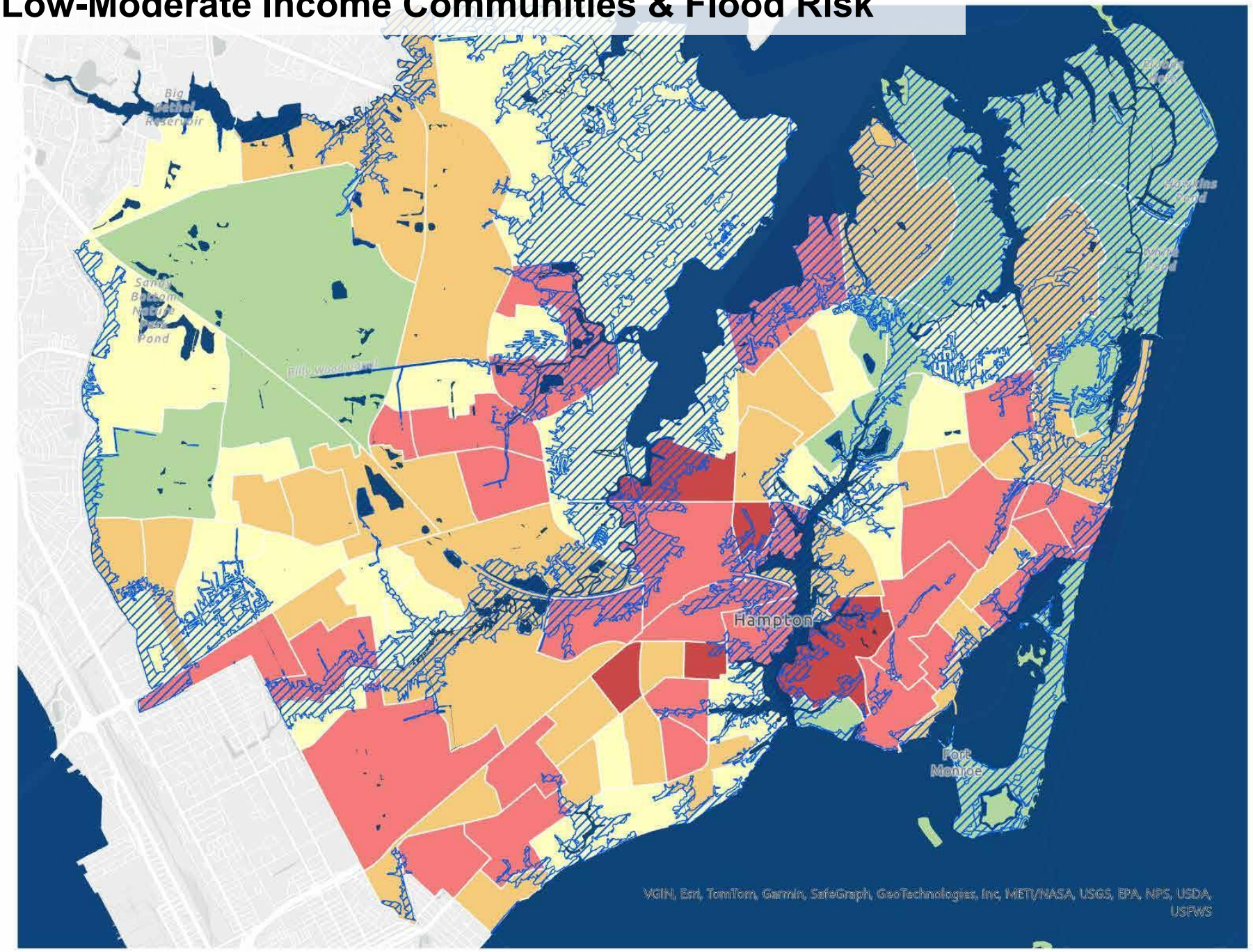
NFIP Areas of Repetitive Loss

Repetitive Loss Clusters

Low Moderate Income Percent

- 0 to 20%
- 20 to 40%
- 40 to 60%
- 60 to 80%
- 80 to 100%

Low-Moderate Income Communities & Flood Risk



LEGEND

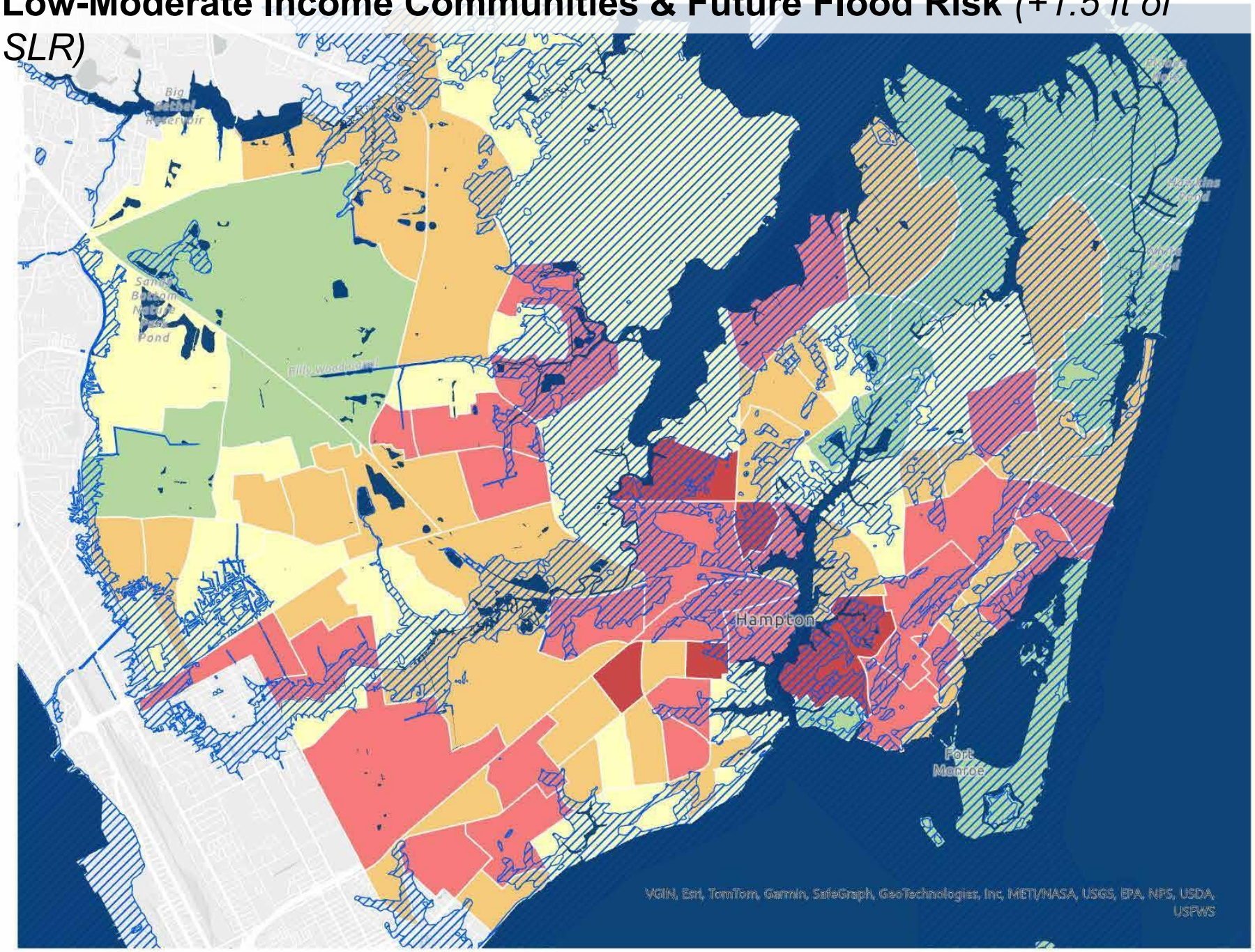
Low Moderate Income Percent

- 0 to 20%
- 20 to 40%
- 40 to 60%
- 60 to 80%
- 80 to 100%

FEMA Flood Zones (Existing)

- 100 Year Floodplain

Low-Moderate Income Communities & Future Flood Risk *(+1.5 ft of SLR)*



LEGEND

Low Moderate Income Percent

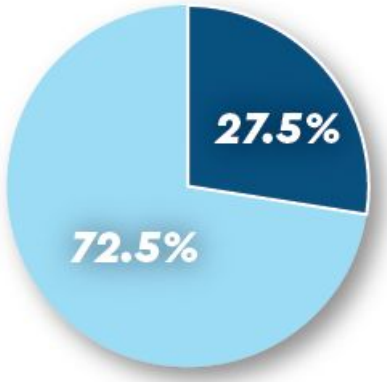
- 0 to 20%
- 20 to 40%
- 40 to 60%
- 60 to 80%
- 80 to 100%

FEMA Flood Zones (+1.5 ft SLR)

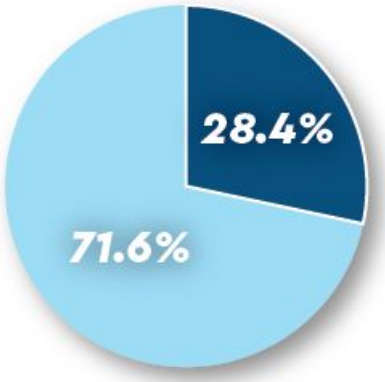
- 100 Year Floodplain

City of Hampton Population Living in the Floodplain

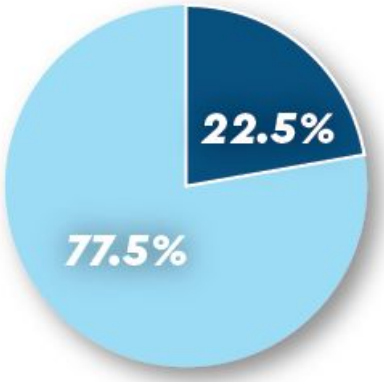
General Population
135,583



Population Over 65
19,719



Population in Poverty
20,609



Inside 100-Year Floodplain Outside Floodplain

National Flood Insurance Repetitive Loss Claim Payments 1978–2021

884 Repetitive Loss Properties
(unmitigated)

5,775 Claims

$74.7 Million in Payments

The Virginian-Pilot

Local News | Nationwide drops over 10,500 N.C. homeowners...

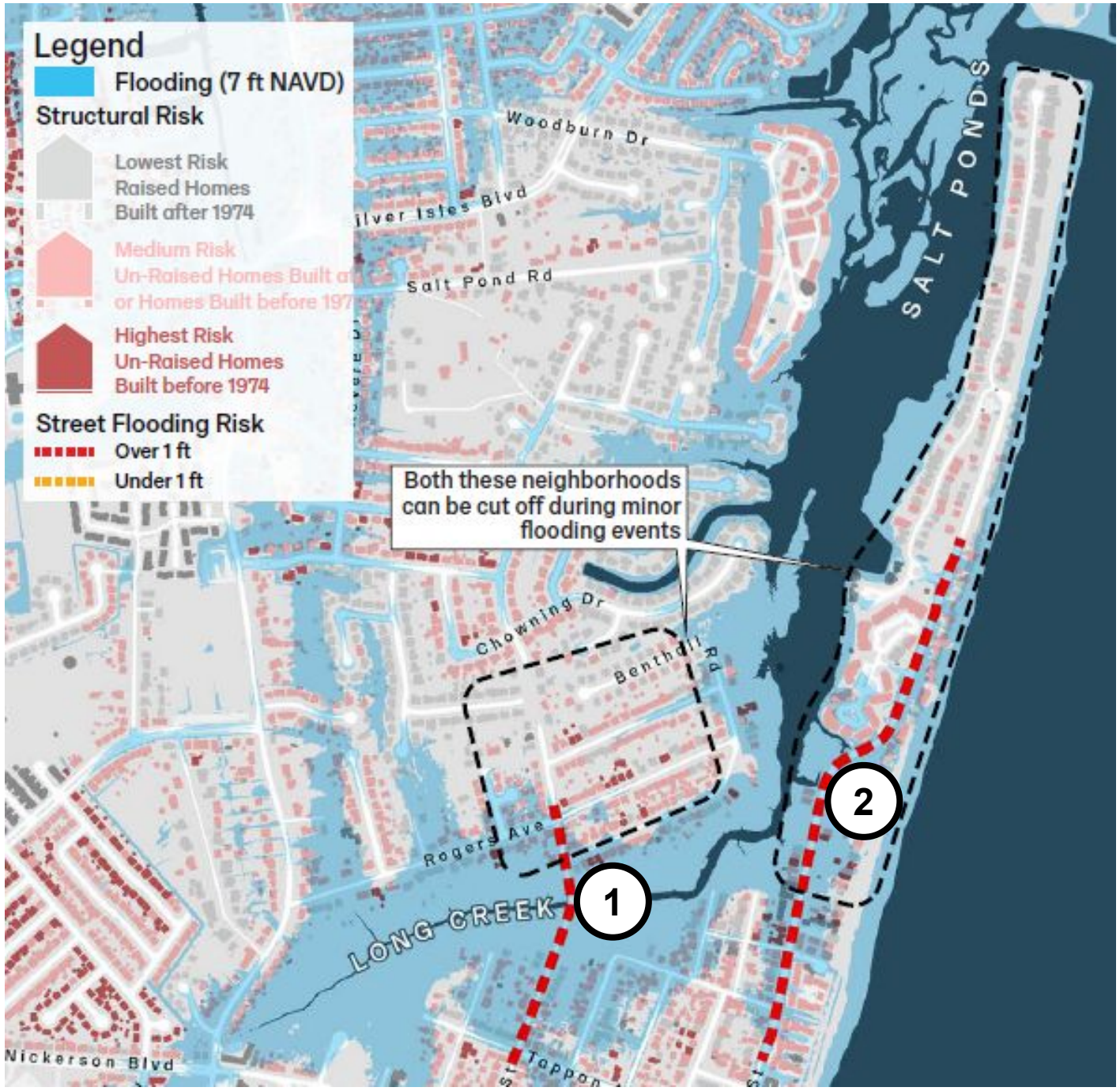
LOCAL NEWS

Nationwide drops over 10,500 N.C. homeowners policies, including some on the Outer Banks

Rough seas bring a one-story beach cottage down into the Atlantic Ocean on the Outer Banks Monday, March 13, 2023, the fourth home to Hatteras Island in one year. The stretch of beach in Rodanthe is rapidly eroding, and officials are grappling with how to deal with it.

NEWS

Why some insurance companies are pulling out of Hampton Roads


Legend
Flooding (7 ft NAVD)
Structural Risk
Lowest Risk
Raised Homes
Built after 1974
Medium Risk
Un-Raised Homes Built a
or Homes Built before 197
Highest Risk
Un-Raised Homes
Built before 1974
Street Flooding Risk
Over 1 ft
Under 1 ft
Woodburn Dr
ilver Isles Blvd
Salt Pond Rd
SALT PONDS
Both these neighborhoods can be cut off during minor flooding events
Chowning Dr
Benthall Rd
Rogers Ave
LONG CREEK
Nickerson Blvd
Tappon
1
2

1

2


735
737

What?

Living with Water Strategic Priority

Addressing coastal resiliency, reoccurring flooding, waterways, and environmental sustainability while enhancing our tax base and quality of life.

Address the challenge of flooding

Recognize & treat water resources as assets

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Living with Water Strategic Priority

- Shoreline protection
- Structural adaptation
- Stormwater system upgrades & maintenance

Address the challenge of flooding

Recognize & treat water resources as assets

- Coastal placemaking
- Coastal dependent industry investment
- Waterway access

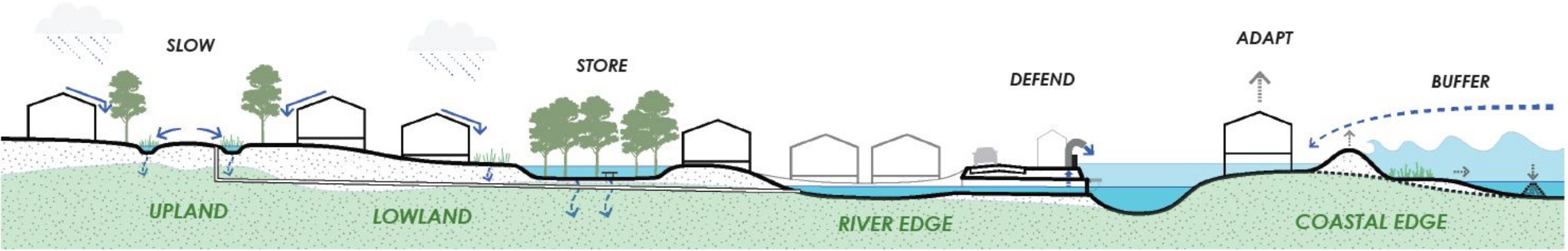
- Structural relocation
- Green infrastructure retrofits
- Low impact development
- Open space preservation
- Tree & habitat conservation
- Shoreline & habitat restoration

- Transportation corridor functionality
- Pedestrian, bicycle & transit connectivity and accessibility

Resilience is the bolstering of a community's **inherent strengths** in order to alleviate **chronic stresses** and enable recovery from **extreme events and shocks** in ways that make the community even **stronger than before**.

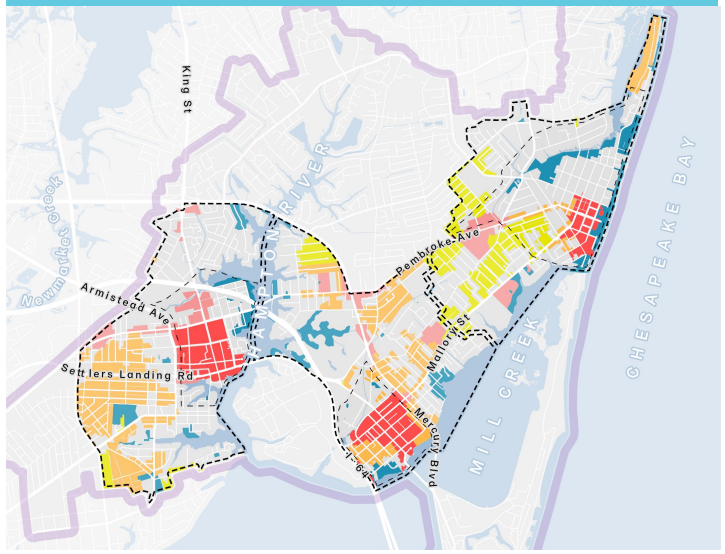
Our Mission: Living with Water

To envision, create, and empower Hampton to **live and thrive with water and the impacts of climate change** through approaches driven by data and values.



Resilient Hampton Team's Work

Planning & Policy



Projects & Programs

People & Partners

Our Principles

1. Create Value-Driven Solutions
2. Reinforce Assets
3. Layer Public Benefits
4. Strengthen Partnerships
5. Use Best Data
6. Share Knowledge and Resources

With partners at multiple scales

Values-Driven Initiative

Safe
Reducing risk and creating safe, reliable systems

Equitable
Create benefits for all, and support marginalized sectors of community

Natural
Repair & protect natural systems to sustain them for the future

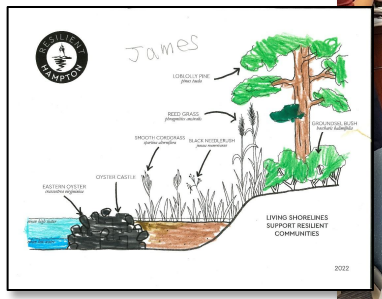
Nimble
Adapt to change, new data, best practices

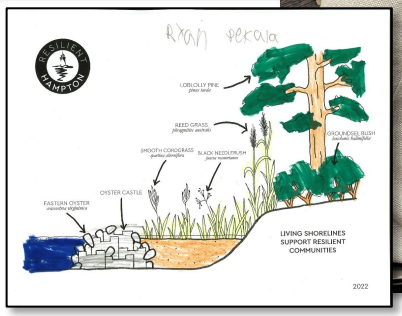
Heritage
Appreciate and support history and culture of local communities

Integrated
Connect systems strategically to yield multiple benefits

Sufficient
Leverage public/private investment to support local economy

Innovative
Create forward-thinking solutions





COMMUNITY BUILDING

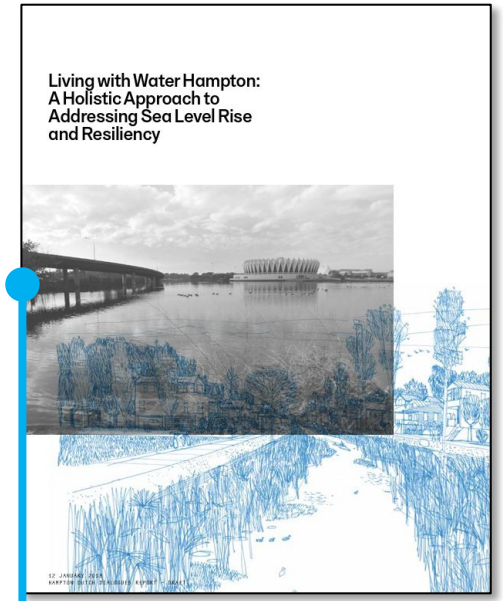
City Wide

Watershed Level

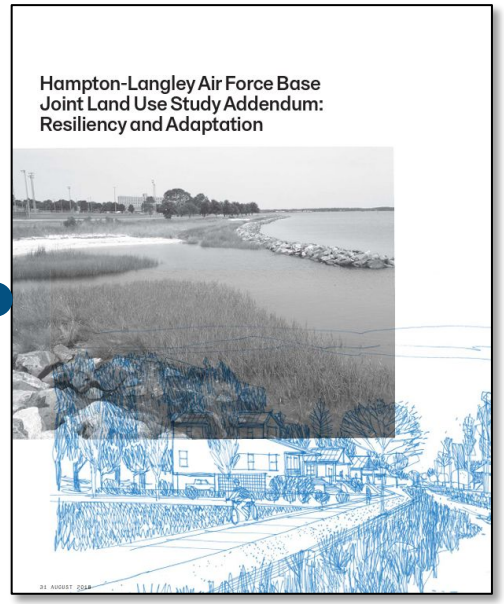
2015

Dutch Dialogues, VA

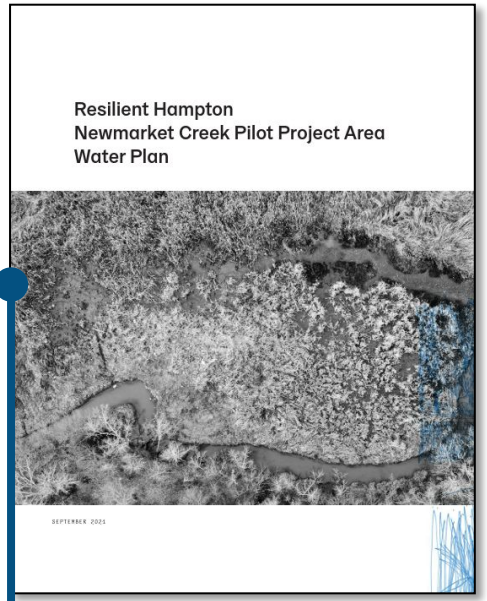
2017



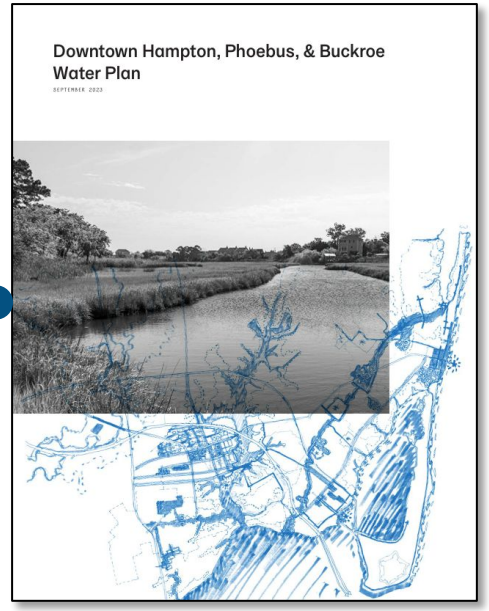
2018



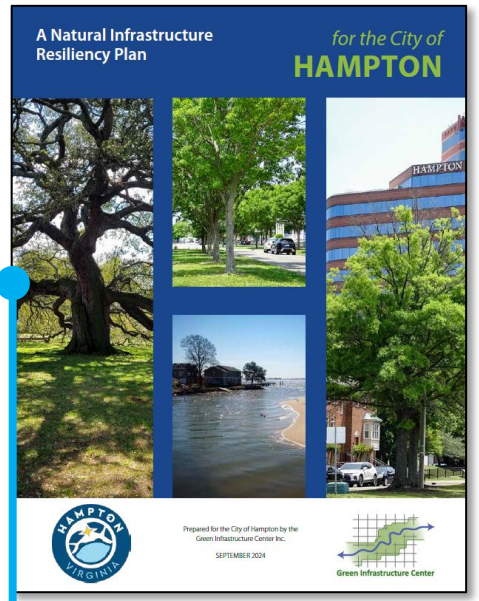
2020



2022



2024



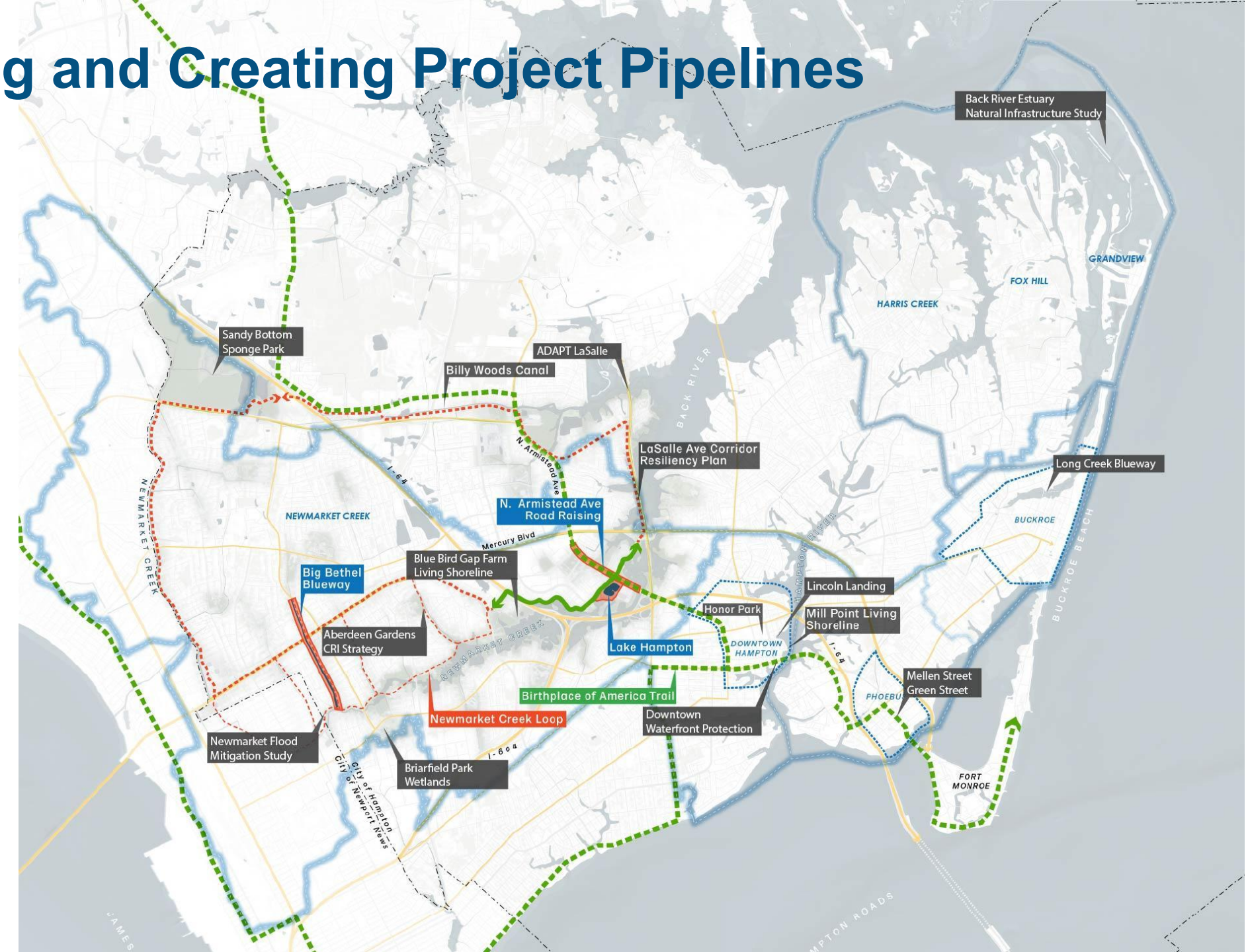
2024

Peninsula Coastal Storm Risk Management Study

2025

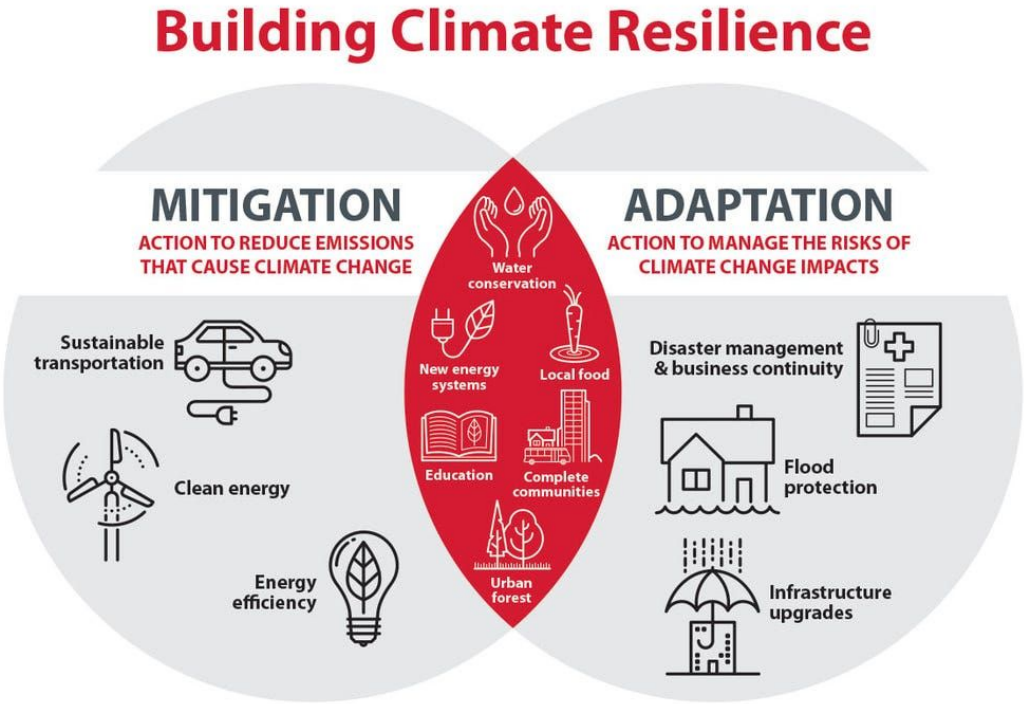
Fox Hill, Grandview, & Harris Creek Water Plan

Planning and Creating Project Pipelines



Parallel Planning Efforts

- Preliminary Climate Action Plan (PCAP)
- Facilities Energy Audit (EECDBG)
- Citywide Stormwater Model & GIS Gap Analysis – Phase 1
- City Strategic Plan – Living With Water
- Hampton City Schools Resilience Plan



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Resilience for Discretionary Land Use Decisions

(Re-Zonings, Use Permits, Development Proposals)

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Resilient Design Process

Assess Project Criticality and Lifespan

Define Climate Risks By Location

Select Climate-Informed Design Parameters

Identify Applicable Policies

Identify Applicable Resilient Design Strategies

Figure 1: Opportunities to Strengthen Resilience throughout Project Lifecycle

1 INITIATION

- **1.1 Project Initiation**
- 1.2 FCA Report
- **1.3 Budget Estimate Financial Feasibility**
- 1.4 Budget Controls Cost Structure
- 1.5 Document Control
- 1.6 Project Work Plan/QA
- 1.7 Project Kick Off Meeting

2 PLANNING

- 2.1 Existing Conditions
- 2.2 Benchmarking
- 2.3 Site Evaluation
- **2.4 Comprehensive Plan**
- 2.5 Financial Feasibility
- 2.6 Risk Evaluation
- 2.7 Outreach Plan
- **2.8 Concept Design**
- 2.9 Contracting Strategy
- 2.10 LEED Planning

3 DESIGN

- **3.1 Pro-design**
- 3.2 Concept (15%)
- **3.3 Schematic Design (35%)**
- 3.4 Design Development (65%)
- 3.5 Construction Development (100%)
- 3.6 Compliance Submittal

4 CONSTRUCTION

- 4.1 Staffing Plan
- 4.2 Pre-Const. Meetings
- 4.3 Mobilization
- 4.4 Submittals
- 4.5 Site Surveys
- **4.6 Utilities**
- 4.7 Daily Reports
- **4.8 Const. Management**
- 4.9 Safety Plan Monitoring
- 4.10 Site Visits
- 4.11 Photos & Testing

5 O&M

- 5.1 Physical Descriptions
- **5.2 Functional Descriptions**
- 5.3 Troubleshooting
- 5.4 Preventative Maintenance
- 5.5 Corrective Maintenance
- 5.6 Training Plan
- **5.7 Roles and Responsibilities**

6 CLOSE OUT

- 6.1 Close-Out Checklist
- 6.2 Deficiencies List, Substantial Completion, Final Inspection
- **6.3 LEED Construction**
- 6.4 Drawings/As Built
- 6.5 Waivers of Liens
- 6.6 Final Acceptance
- **6.7 Lessons Learned**
- 6.8 Archiving
- 6.9 Warranty Walk Throughout

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Resilience Profile

Figure 4: Steps to create a Resilience Profile for a project.

#	BUILDING STRATEGIES
	DESIGN FOR FLOODING
1	Avoid Development in Flood Hazard Areas
2	Keep Occupied Spaces Above the Sea Level Rise Adjusted Flood Elevation
3	Integrate Exterior Dry Floodproofing Techniques
4	Improve Drainage Control and Prevent Intrusion into Buildings
5	Use Wettable Systems/Finishes At and Below the Lowest Occupiable Floor
6	Provide Rainscreen Detail for Siding/Cladding
7	Reinforce Building Corners and Exteriors
8	Specify a Resilient Elevator
9	Protect Mechanical and Electrical Equipment from Flooding
10	Install Sewer Backflow Preventers
11	Consider a Vegetative (Green) Roof
	DESIGN FOR EXTREME HEAT
12	Building Form and Envelope
13	Continuous Air Barrier
14	Design for Increased Termites
15	Disease Carrying Insects
16	Mechanical Systems of The Future
17	Vegetated Facade
18	Cool or Reflective Roofs
	DESIGN FOR POWER OUTAGES
19	Achieve Passive Survivability
20	Design for Natural Daylighting
21	Provide Backup Power with Islanding Capability
22	Wire Building so that Critical Loads Are on Separate Circuits
23	Target 100% Building Electrification
24	Install Solar Electric System

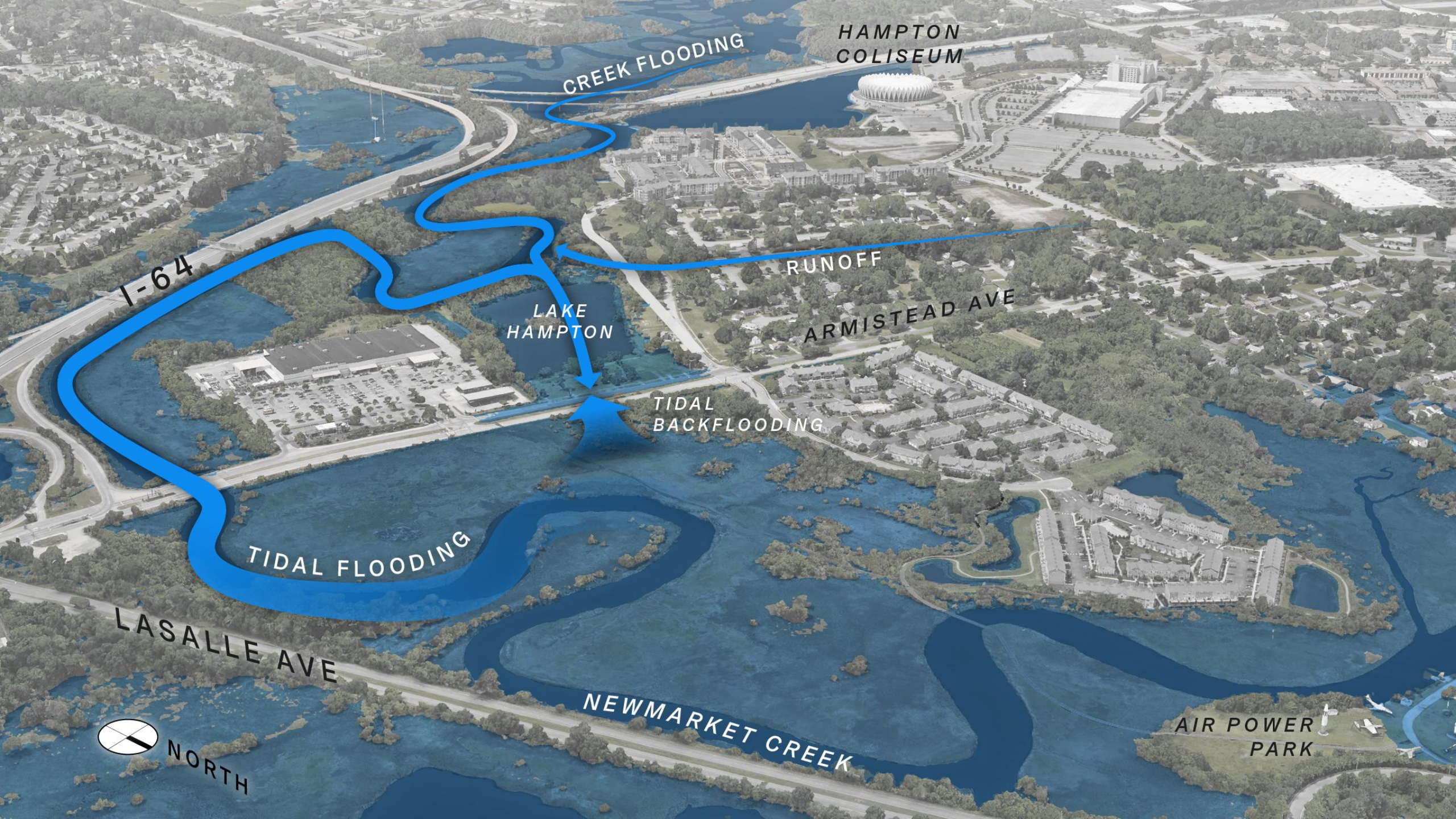
#	SITE/LANDSCAPE STRATEGIES
	DESIGN FOR FLOODING
25	Implement Project Setbacks
26	Minimize Channelization of Stormwater
27	Design for Stormwater Infiltration
28	Incorporate Green Infrastructure
29	Install Permeable Pavement
30	Protect Critical Assets with Barriers
31	Plan for Controlled Flooding
	SPECIAL CONSIDERATIONS FOR WATERFRONT AREAS
32	Increase Setbacks From Waterfront
33	Design Waterfront Areas for Inundation
34	Incorporate Living Shorelines
35	Protect Floating Docks and Marina Assets
36	Design Waterfront Boating Access to Accommodate Change
	DESIGN FOR EXTREME HEAT
37	Provide Vegetative Shading
38	Install Drought-Tolerant Landscaping
39	Use Reflective Materials in Paved Patios, Parking Lots, and Sidewalks
40	Provide Shaded Outdoor Gathering Spaces

RH Goal 1	Hampton will address the challenge of sea level rise and resiliency in a holistic manner founded upon the best science and data available, our own set of community values, and an appreciation for the uniqueness of each place.
RH Goal 5:	Enhancing our response to sea level rise and resiliency shall be addressed at multiple scales: regional, city-wide, neighborhood, and individual parcel.
LU Objective 10	Promote multiple benefits in all scales of development.
LU Objective 11	Implement resiliency standards.
LU-CD Policy 37	Allocate the appropriate space for water and water storage to help reduce risk to property.

LU-CD Policy 38	Recognize the water is an asset to be reinforced in land use decisions.
LU-CD Policy 39	Prioritize protecting natural systems and restore or recreate natural systems where they have been compromised.
LU-CD Policy 40	Promote best management practices and development projects that provide multiple benefits.
LU-CD Policy 42	Appreciate Hampton's culture of water and promote access to the water.
LU-CD Policy 43	Be nimble and able to adapt to future anticipated conditions.
LU-CD Policy 44	Align land use and land development codes and ordinances to support Hampton's resiliency goals.

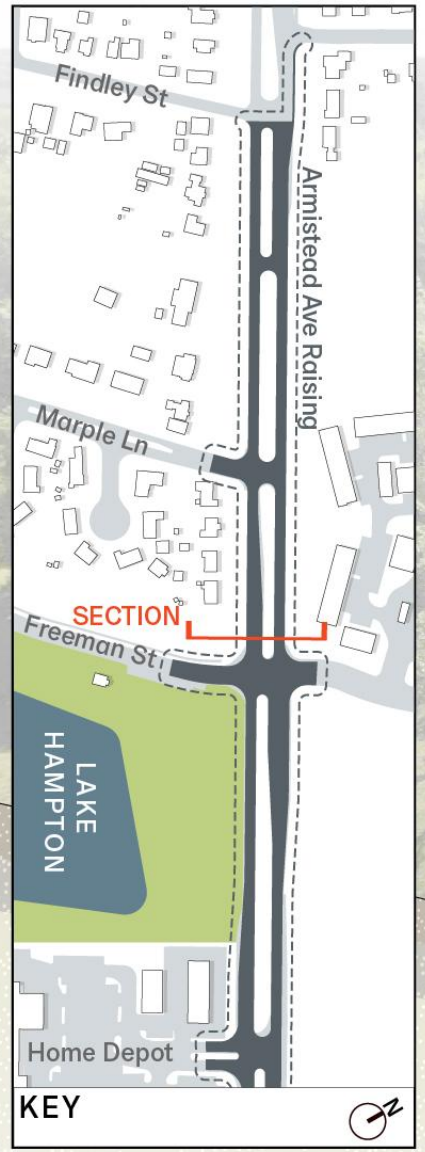
HN Policy 18	Promote the construction of resilient housing and neighborhoods, and focus on the unique needs of each community.
EN Objective 3	Protect and improve water quality within Hampton and the region.
EN Objective 6	Practice and promote integrated pest management.
EN Objective 7	Practice and promote water and energy conservation.
EN Objective 10	Promote a thriving “urban forest” that provides ecological, economic, and aesthetic benefits for Hampton.
EN Objective 11	Minimize the exposure of Hampton residents and visitors to environmental hazards.
EN Policy 26	Ensure that waterfront development is sensitive to shoreline erosion, flood protection, and water quality.
EN Policy 28	Preserve and protect existing mature trees in new development and redevelopment.
EN Policy 29	Promote the conservation and restoration of creeks and other waterways as open space amenities, natural habitat areas, and elements of community design.


BIG BETHEL BLUEWAY
HAMPTON COLISEUM
I-64
LAKE HAMPTON
N ARMISTEAD AVE ROAD RAISING
LASALLE AVE
NEWMARKET CREEK
WATERWALK TRAIL
AIR POWER PARK
MERCURY BLVD
NORTH


CREEK FLOODING
HAMPTON COLISEUM
I-64
RUNOFF
LAKE HAMPTON
ARMISTEAD AVE
TIDAL BACKFLOODING
TIDAL FLOODING
LASALLE AVE
NEWMARKET CREEK
AIR POWER PARK
NORTH


CREEK FLOODING
HAMPTON COLISEUM
I-64
BERM
LAKE HAMPTON
RE-DIRECTED RUNOFF
ARMISTEAD AVE
ROAD RAISING
TIDAL FLOODING
LASALLE AVE
NEWMARKET CREEK
AIR POWER PARK
NORTH

North Armistead at Freeman Drive



FINDLEY ST

MARPLE LN

SHARED USE PATH

BIOSWALE

ARMISTEAD AVE

A

B

C

8 ft

14 ft

40 ft

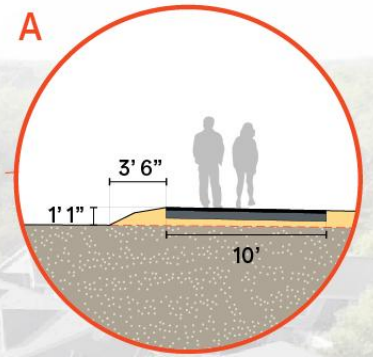
17 ft

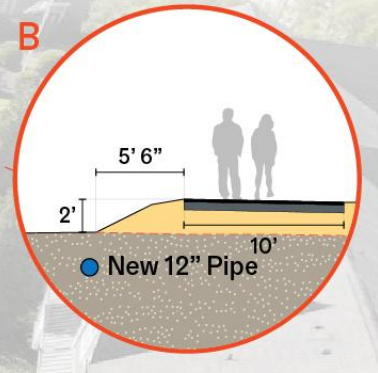
28 ft

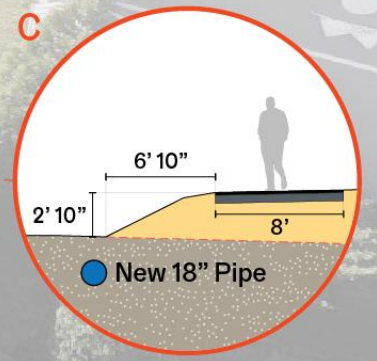
3 ft

6 ft

145 ft








Legend
Existing Paths
New Path Network
Boardwalk
Wetland Water Storage
Bioswale Water Storage
Drainage Paths Pipe
Drainage Path Overland
Extent of Armistead Ave Road Raising
Lake Hampton Park
1/8 Mile
North
FINDLEY ST
MERCER AVE
AIR POWER PARK
MAPLE LN
DETENTION BASINS
BIOSWALES
BOARDWALK
ARMISTEAD AVE
LAKE HAMPTON
HOME DEPOT
HAMPTON COLISEUM
FREEMAN DR
NEWMARKET CREEK
BIRD ISLAND
BERM
WEIR BOX
WETLAND SHELF
NEWMARKET CREEK

Lake Hampton: Existing Shoreline

Lake Hampton: Crescent Boardwalk

Existing Canal at Sunnyside Drive

Big Bethel Blueway Trail and Weir Overlook

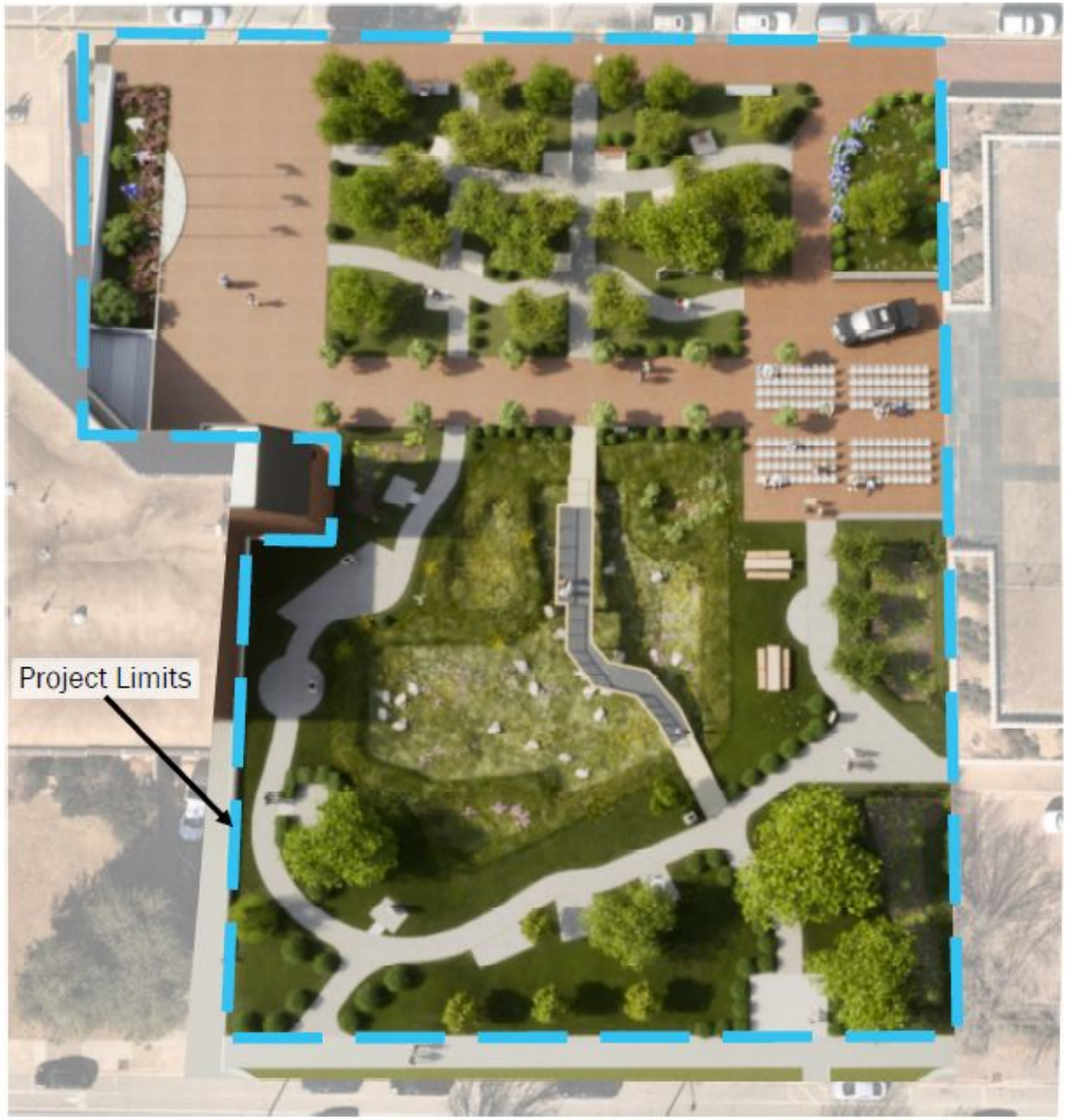
Mill Point Living Shoreline

Lincoln Landing Stormwater Park

Honor Park Resilience Park

EXISTING CONDITIONS

PROPOSED CONCEPT



Why are we talking to you?

Integrate resiliency values and principles into all relevant work in the City, and build bridges between departments and entities.

- Broadly educating staff to understand the challenge of climate change and their opportunities to address it
- Developing tools to support staff to make sound decisions and trade-offs based on resiliency principles and climate realities
- Building bridges with economic development, schools, HRHA, and other entities to identify opportunities to maximize impact

Interacting with the Team