2022 Hampton Roads Hazard Mitigation Plan

Public Meeting #3 – Feedback Forum

March 2, 2022

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Introductions

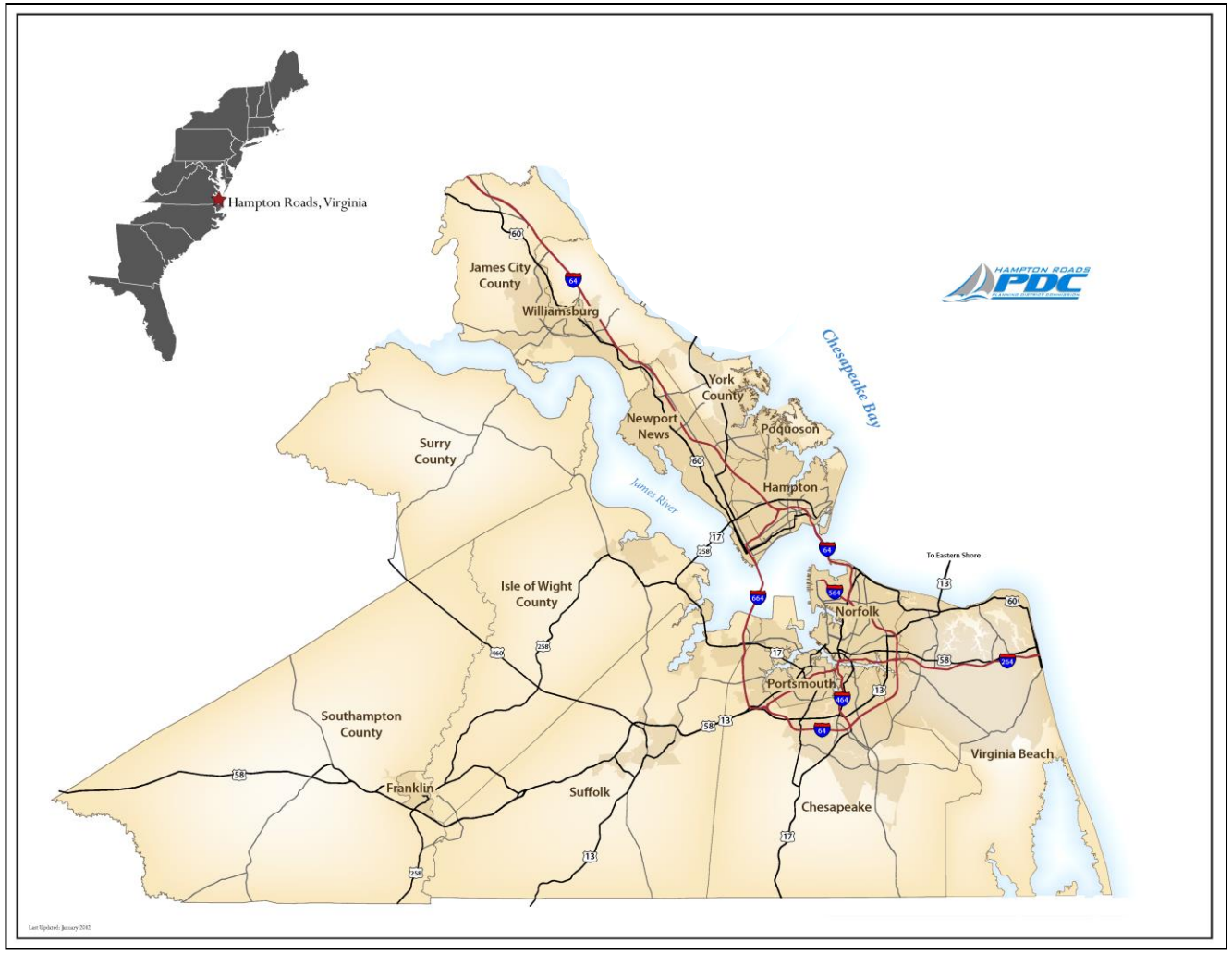
Please type your name and community in which you live in the chat.

Housekeeping Items

- All participants are muted upon entry; video is optional but may become bandwidth dependent
- If you have a question, please use the Q/A function at the bottom of your screen to type your question
- For those on the phone, we do want to hear from you. We can call on you by using the last 4 digits of your phone number and unmuting your line. If you do not have a question, please say so
- We will answer as many questions as possible.
- The meeting will be recorded

25 Participating Jurisdictions

- The Cities of:
  - Chesapeake, Franklin, Hampton, Newport News, Norfolk, Portsmouth, Poquoson, Suffolk, Virginia Beach, and Williamsburg
- The Counties of:
  - Isle of Wight, James City, Southampton, Surry and York
- The Towns of:
  - Boykins, Branchville, Capron, Courtland, Ivor, Newsoms, Smithfield, Windsor, Claremont and Dendron



Process

1

Organize Resources

- Get organized
- Plan for involvement
- Coordinate with other departments and agencies

2

Assess Risk

- Identify the hazards
- Assess the risks

3

Develop the Plan

- Review mitigation alternatives
- Set planning goals
- **Draft action plan**

4

Adopt, Implement & Maintain the Plan

Exposure – Built Environment

Peninsula	
Hampton	$15.8 billion
James City County	$11.2 billion
Newport News	$21.2 billion
Poquoson	$1.8 billion
Williamsburg	$2.0 billion
York County	$9.7 billion

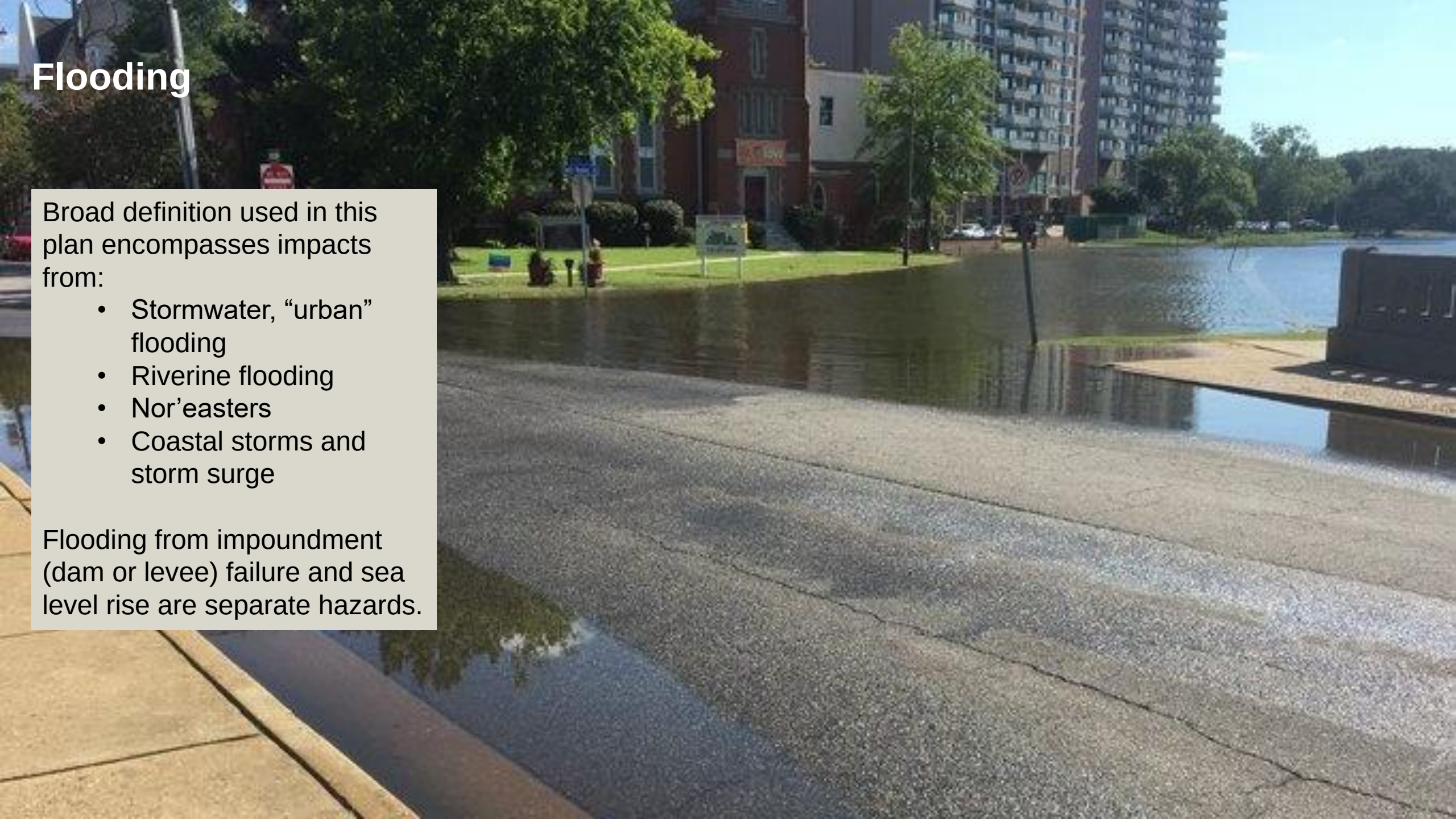
Exposure – Built Environment

Southside	
Chesapeake	$27.9 billion
Norfolk	$29.3 billion
Portsmouth	$10 billion
Suffolk	$10.2 billion
Virginia Beach	$57.2 billion

Exposure – Built Environment

Western Tidewater	
Franklin	$950 million
Isle of Wight County	$4.6 billion
Southampton County	$1.8 billion
Surry County	$796 million

Flooding



Broad definition used in this plan encompasses impacts from:

- Stormwater, “urban” flooding
- Riverine flooding
- Nor’easters
- Coastal storms and storm surge

Flooding from impoundment (dam or levee) failure and sea level rise are separate hazards.

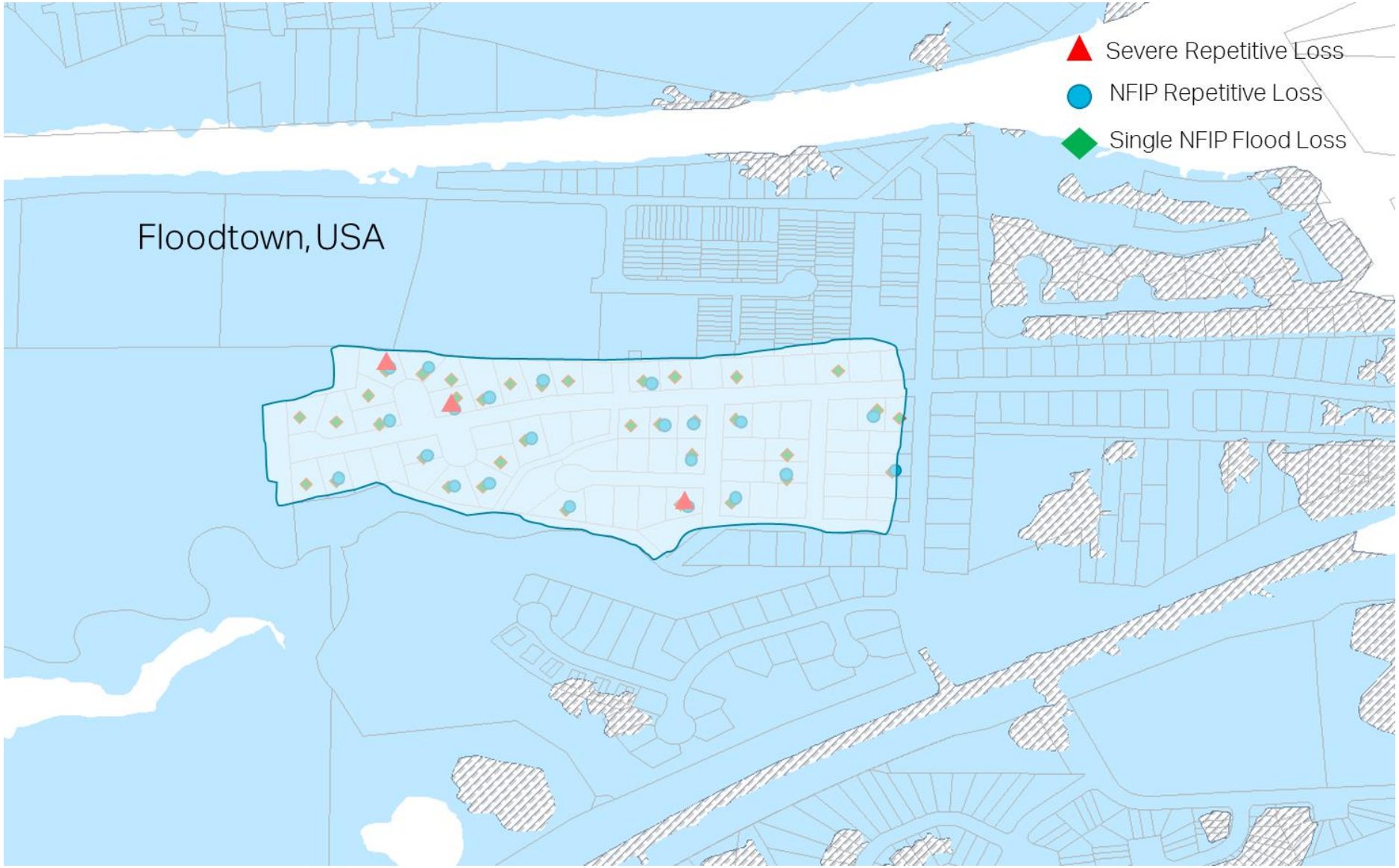
Hazus Level 2 Flood Risk Assessment
100-year Flood Analysis – Annualized Losses

COMMUNITY	# of Residential Buildings Damaged	Average Annual Damages
Hampton	4,012	$6.8 million
Newport News	435	$486,000
Poquoson	1,405	$3.7 million
James City County	64	$156,000
Williamsburg	0	n/a
York County	266	$688,000

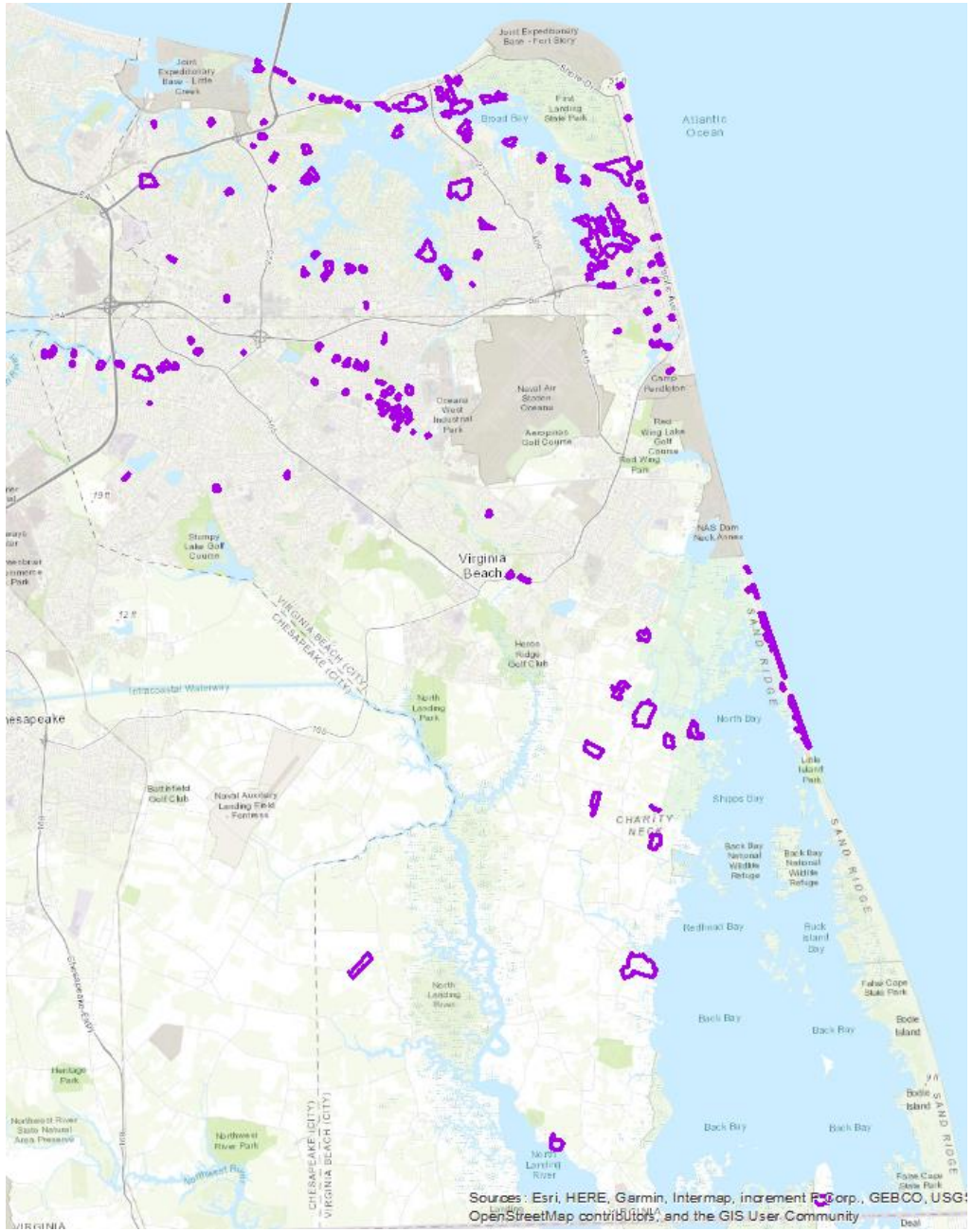
COMMUNITY	# of Residential Buildings Damages	Average Annual Damages
Norfolk	2,684	$19.2 million
Portsmouth	658	$982,000
Suffolk	40	$191,000
Virginia Beach	2,322	$9.5 million
Chesapeake	1,382	$1.8 million

COMMUNITY	# Residential Buildings Damaged	Average Annual Damages
Isle of Wight County	47	$411,000
Franklin*	n/a	$11,000
Southampton County*	n/a	$111,000
Surry County	23	$111,000

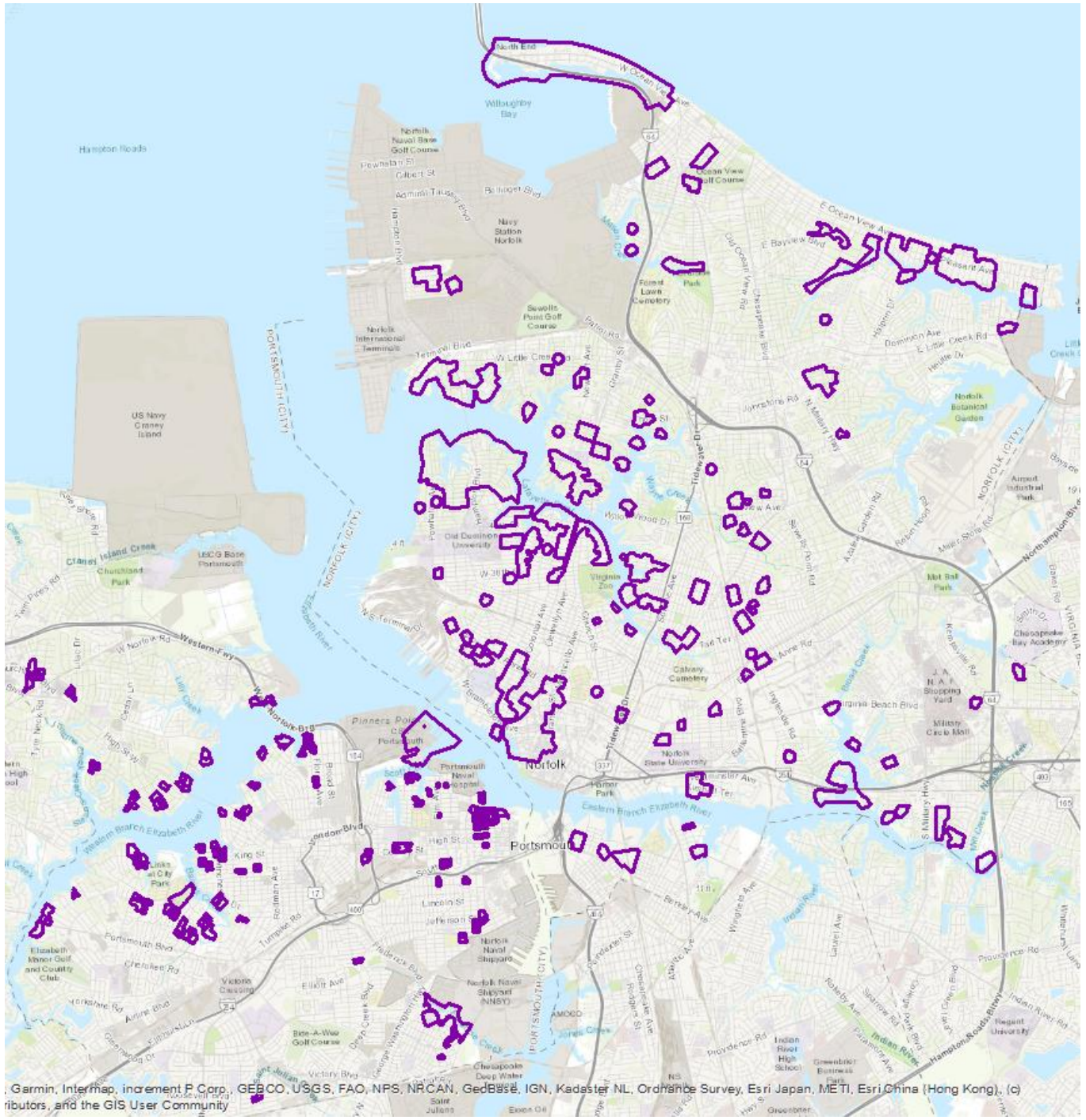
Repetitive Flood Loss Analysis



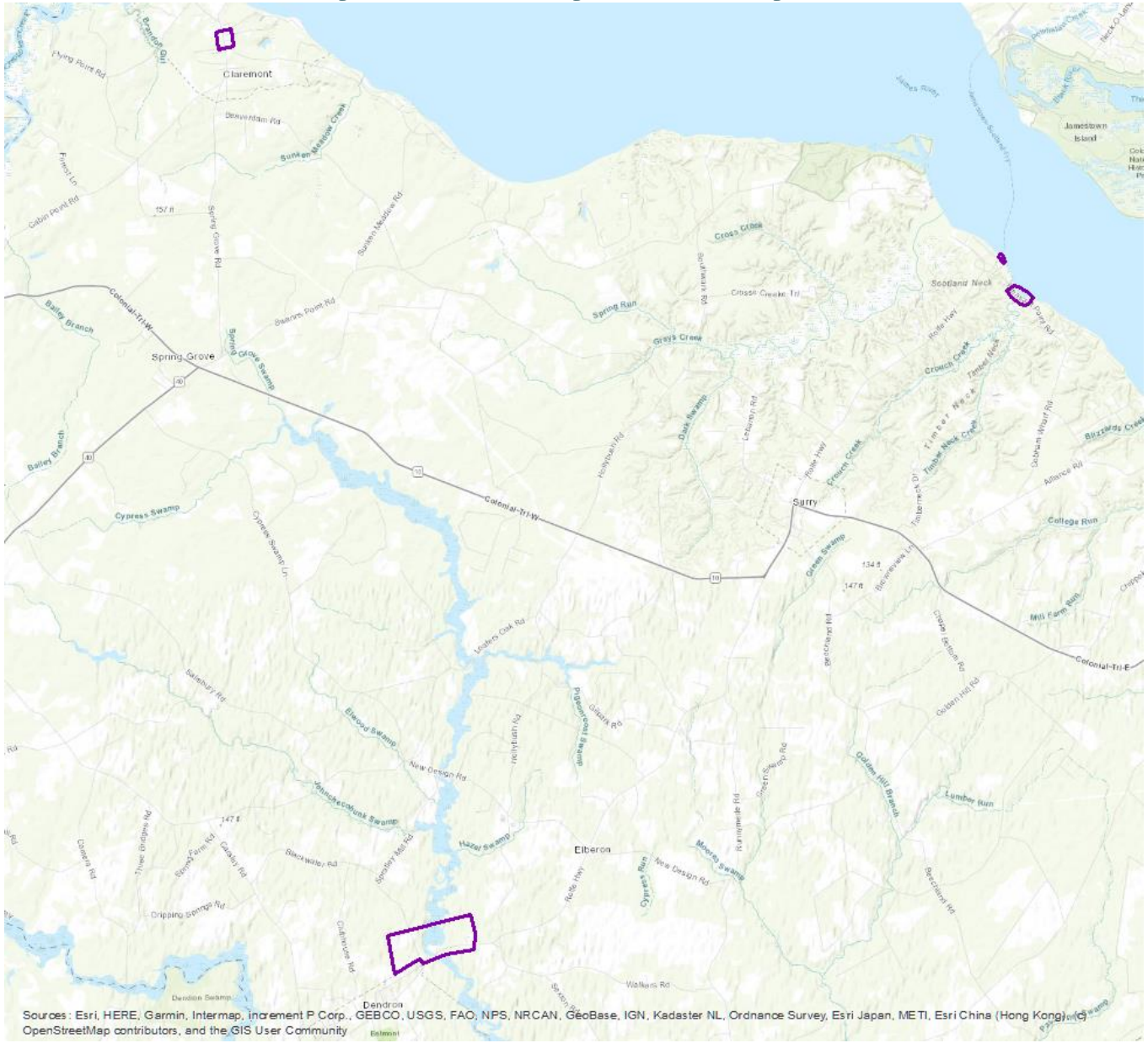
Repetitive Flood Loss Analysis, Virginia Beach



Repetitive Flood Loss Analysis, Norfolk & Portsmouth



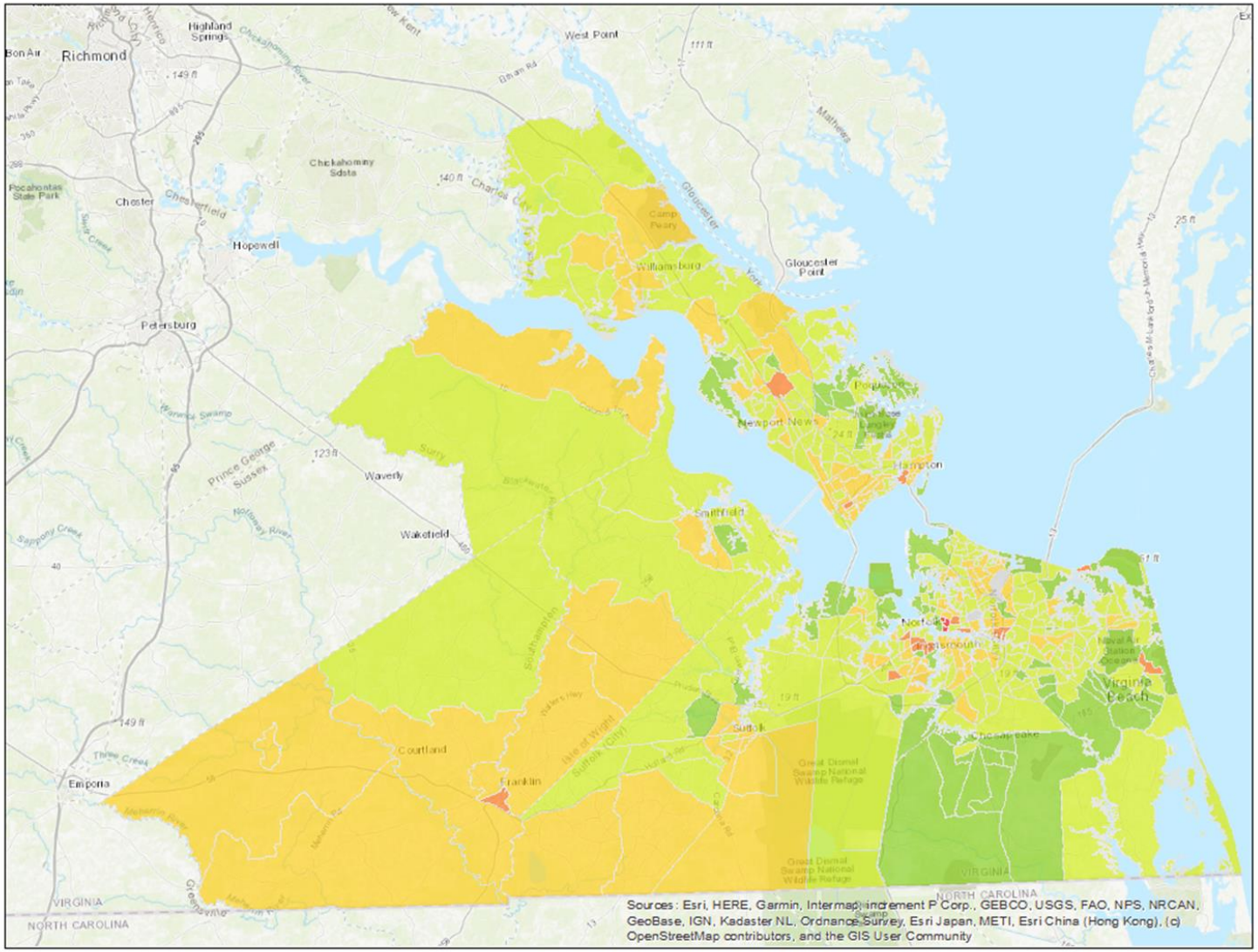
Repetitive Flood Loss Analysis, Surry County



Measuring Social Vulnerability

NRI

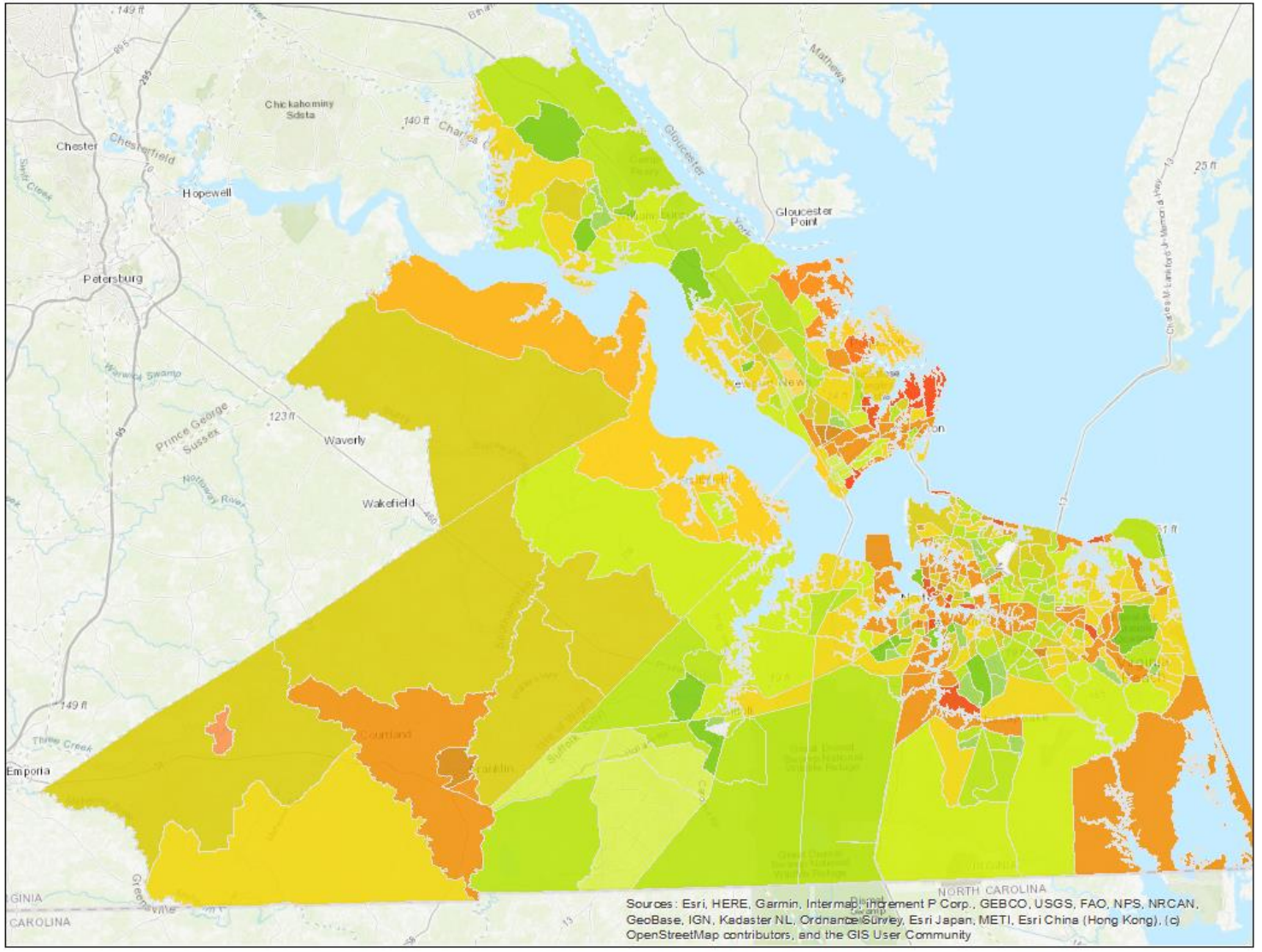
- Very Low
- Relatively Low
- Relatively Moderate
- Relatively High
- Very High



Flooding Risk Rating

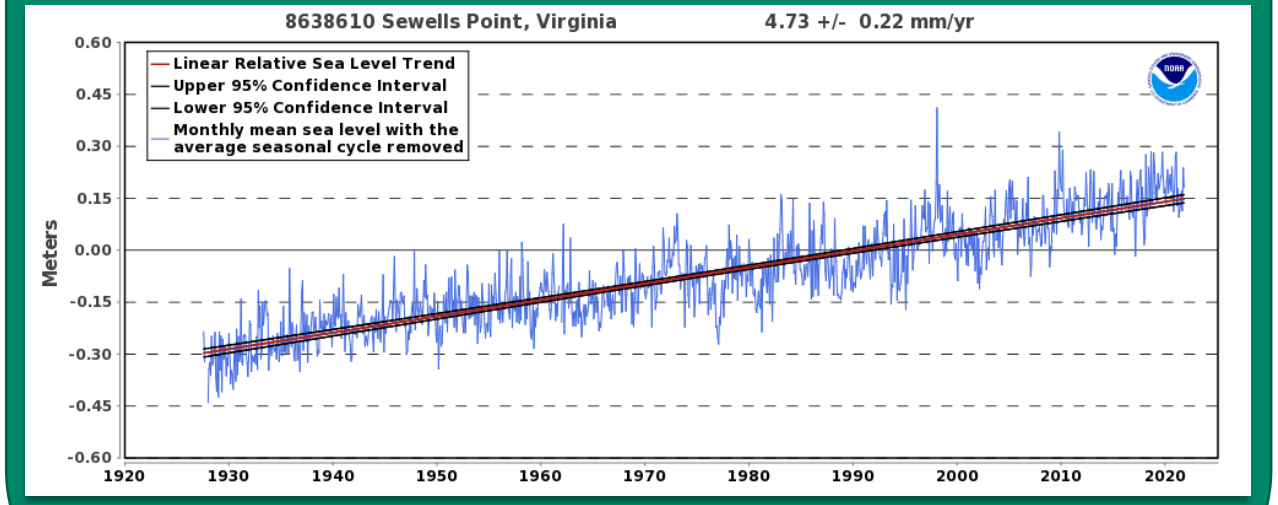
NRI

- Very Low
- Relatively Low
- Relatively Moderate
- Relatively High
- Very High

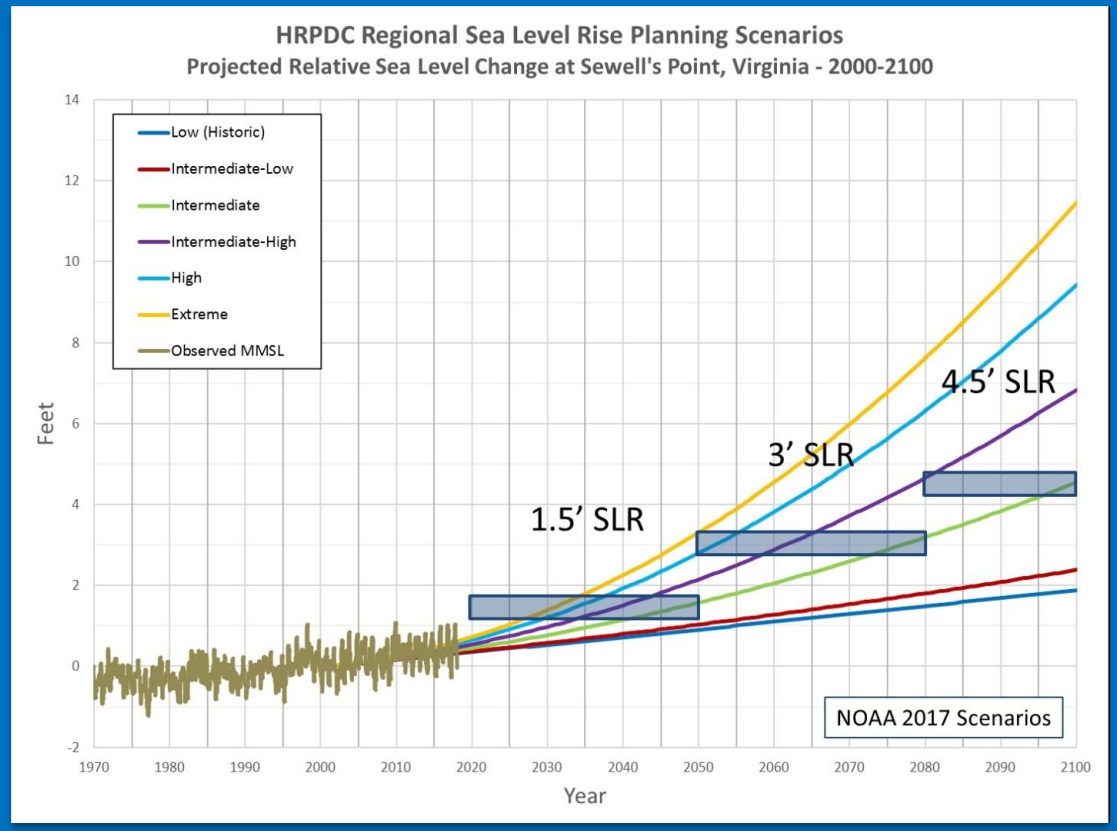


Sea Level Rise

Mean Sea Level Historic Trend



Future Planning Scenarios



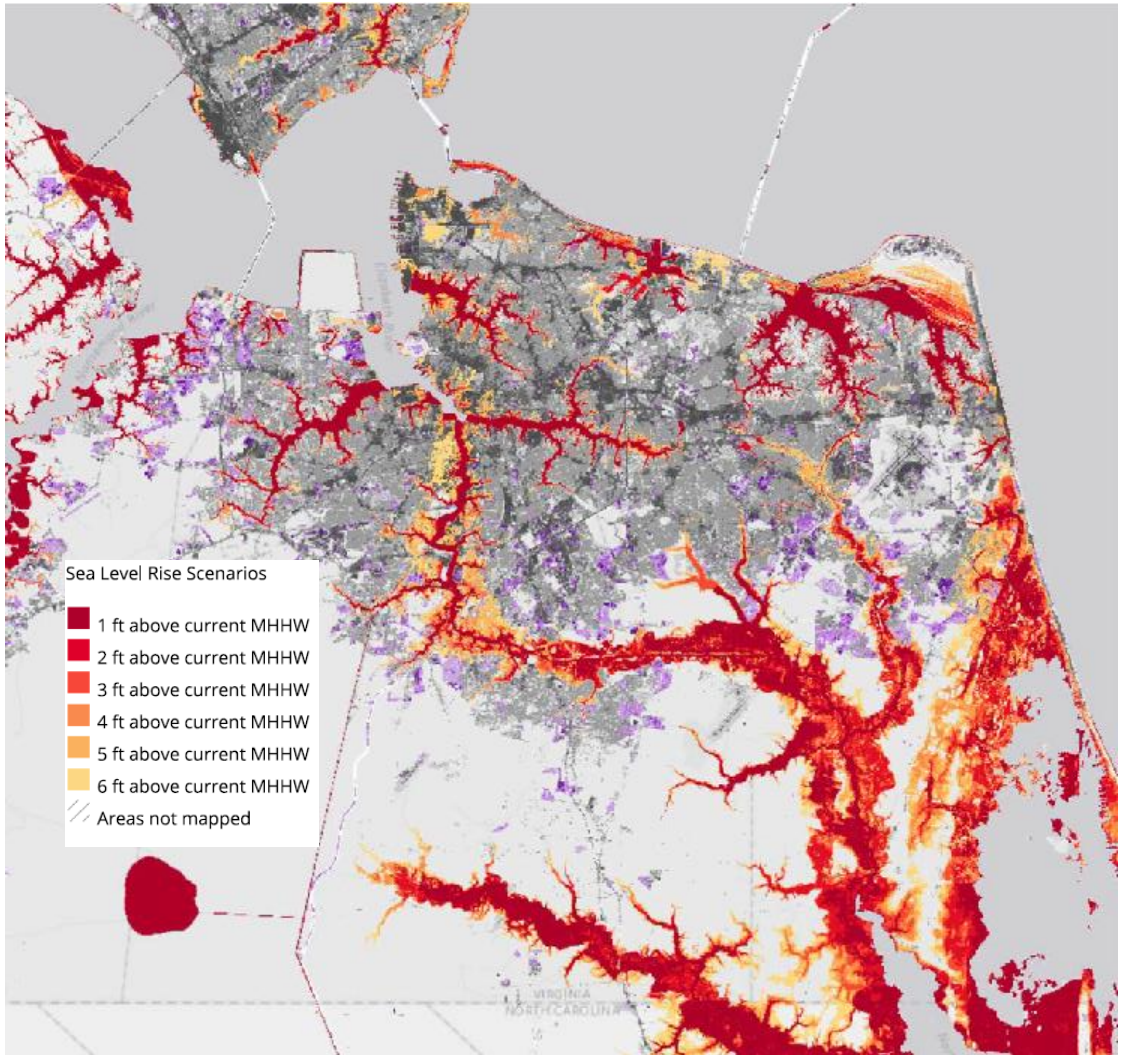
Sea Level Rise

Estimates of Potential Losses

Methodologies Summarized:

1. Apply 2020 Va Beach study results and AAD multiplier of 12 across the region = $558.6 million by the 2070s
2. *2021 Virginia Coastal Resilience Plan, Phase I*, by 2080 AAD increase of 1300%
3. 1991 FEMA study multiplier of 102-200% by 2100

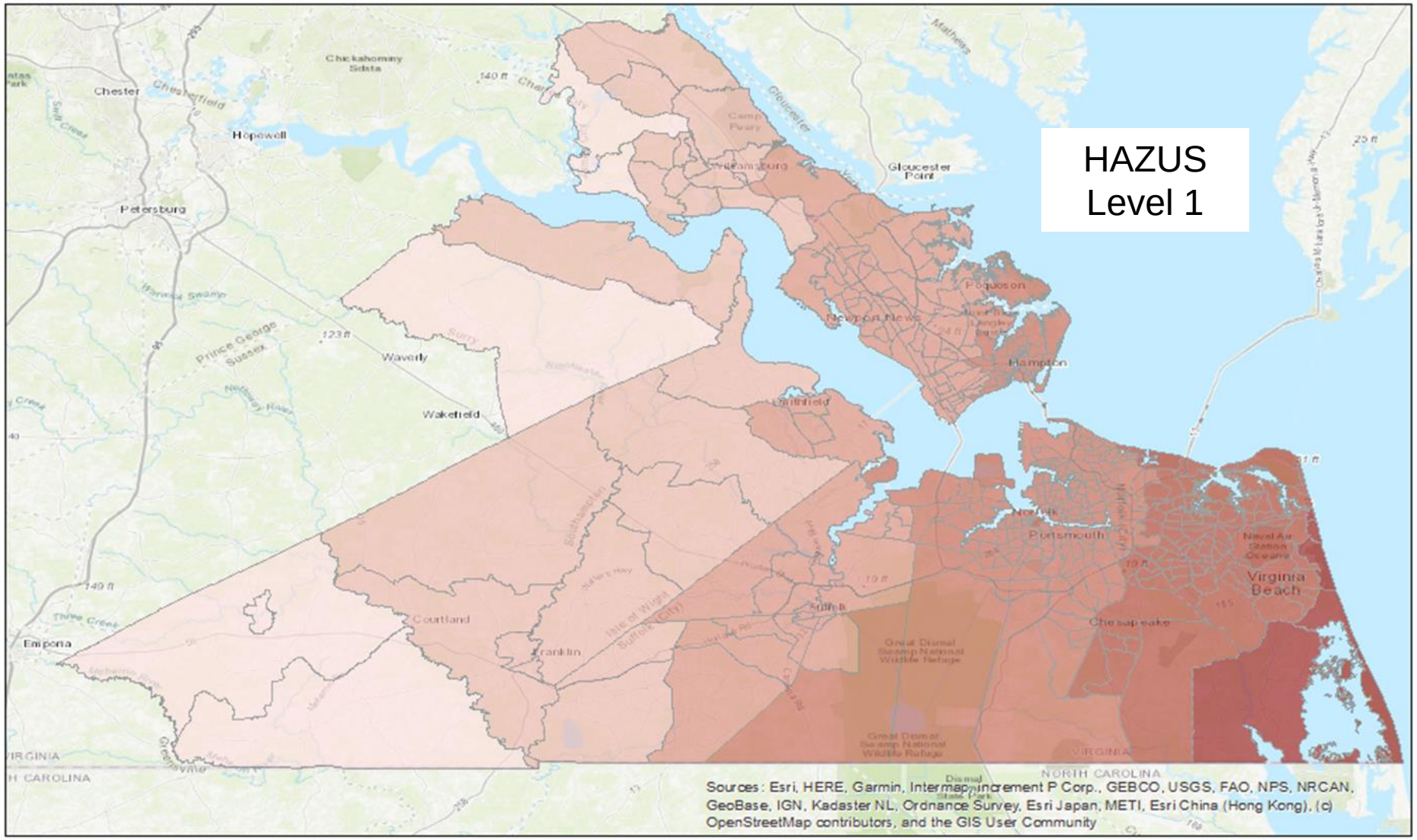
Vulnerability by Jurisdiction



Source: NOAA Coastal Flood Exposure Mapper

Tropical Storms

100-year return period Peak Gust (mph) by Census Tract



- 51 – 60 mph
- 61 – 70 mph
- 71 – 80 mph
- 81 – 90 mph
- 91 – 100 mph
- 101 – 110 mph

Tropical Storms

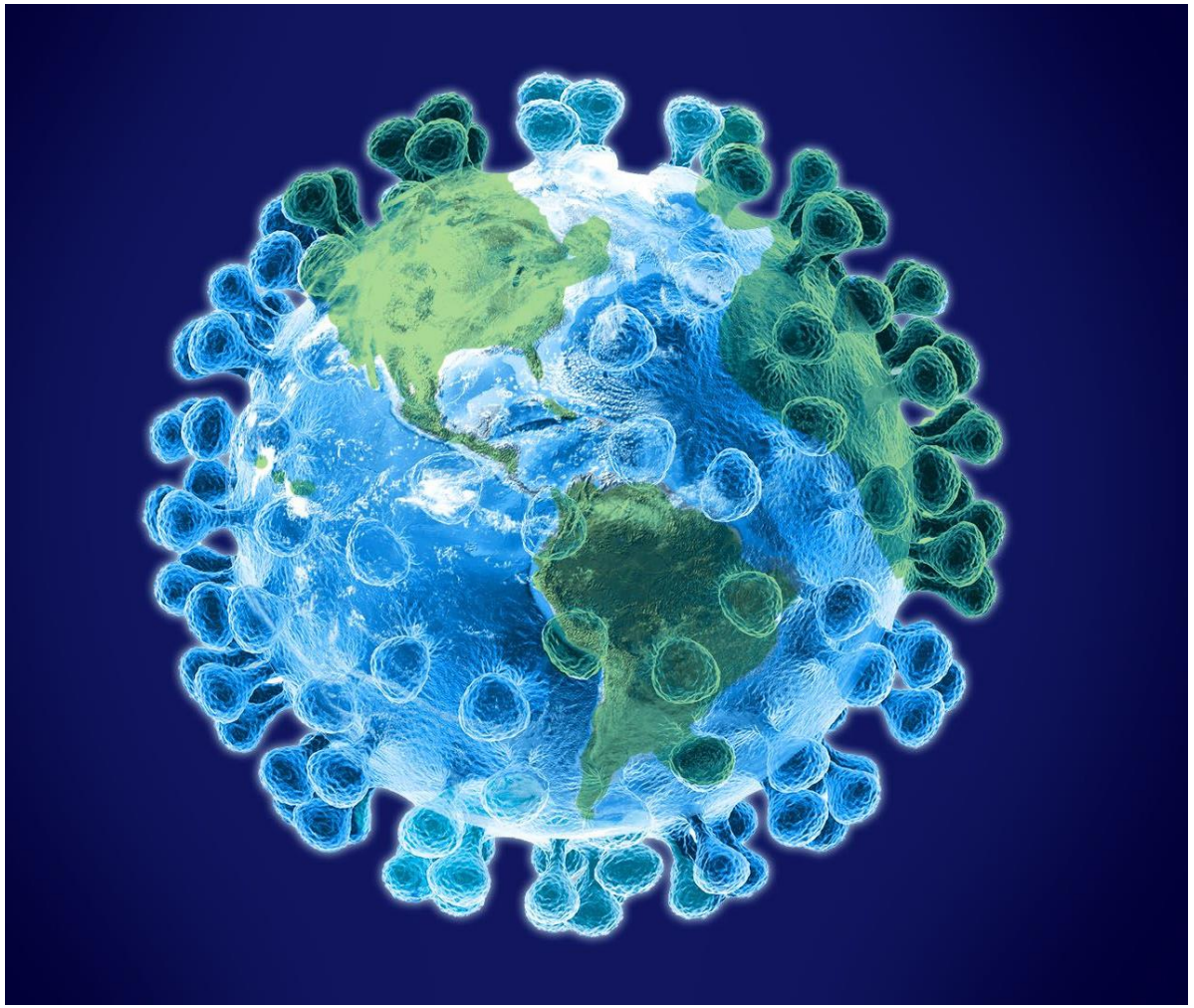
Probabilistic Loss Estimates, ANNUALIZED LOSSES

Peninsula	Total
Hampton	$7,537,000
Newport News	$5,166,000
Poquoson	$698,000
James City County	$2,081,000
Williamsburg	$256,000
York County	$3,161,000

Western Tidewater	Total
Isle of Wight County	$1,227,000
Franklin	$215,000
Southampton County	$457,000
Surry County	$165,000

Southside	Total
Norfolk	$10,600,000
Portsmouth	$3,711,000
Suffolk	$3,180,000
Virginia Beach	$3,855,000
Chesapeake	$13,002,000

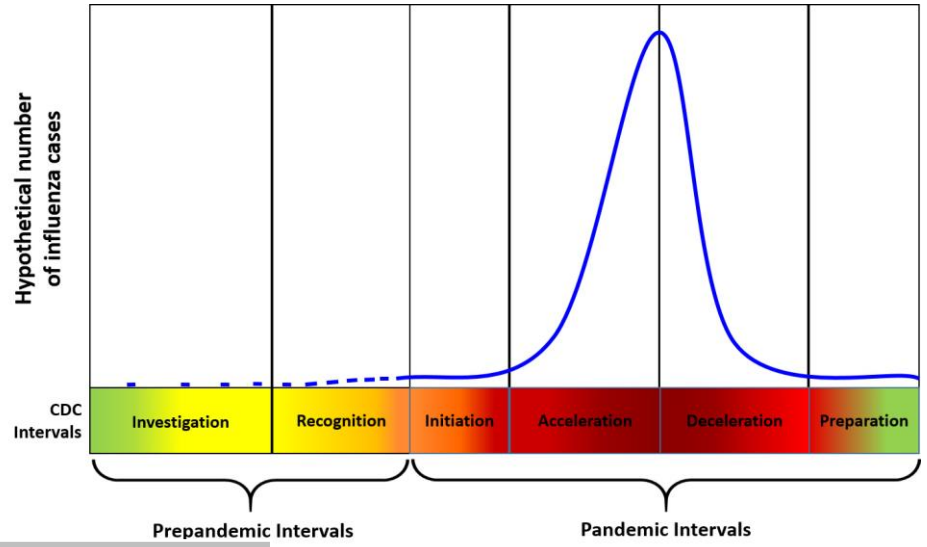
Infectious Diseases: Pandemic Flu



Pandemic is defined as an epidemic of:

- Influenza virus
- Worldwide spread
- Infection of large proportion of human population

Infectious Diseases: Pandemic Flu

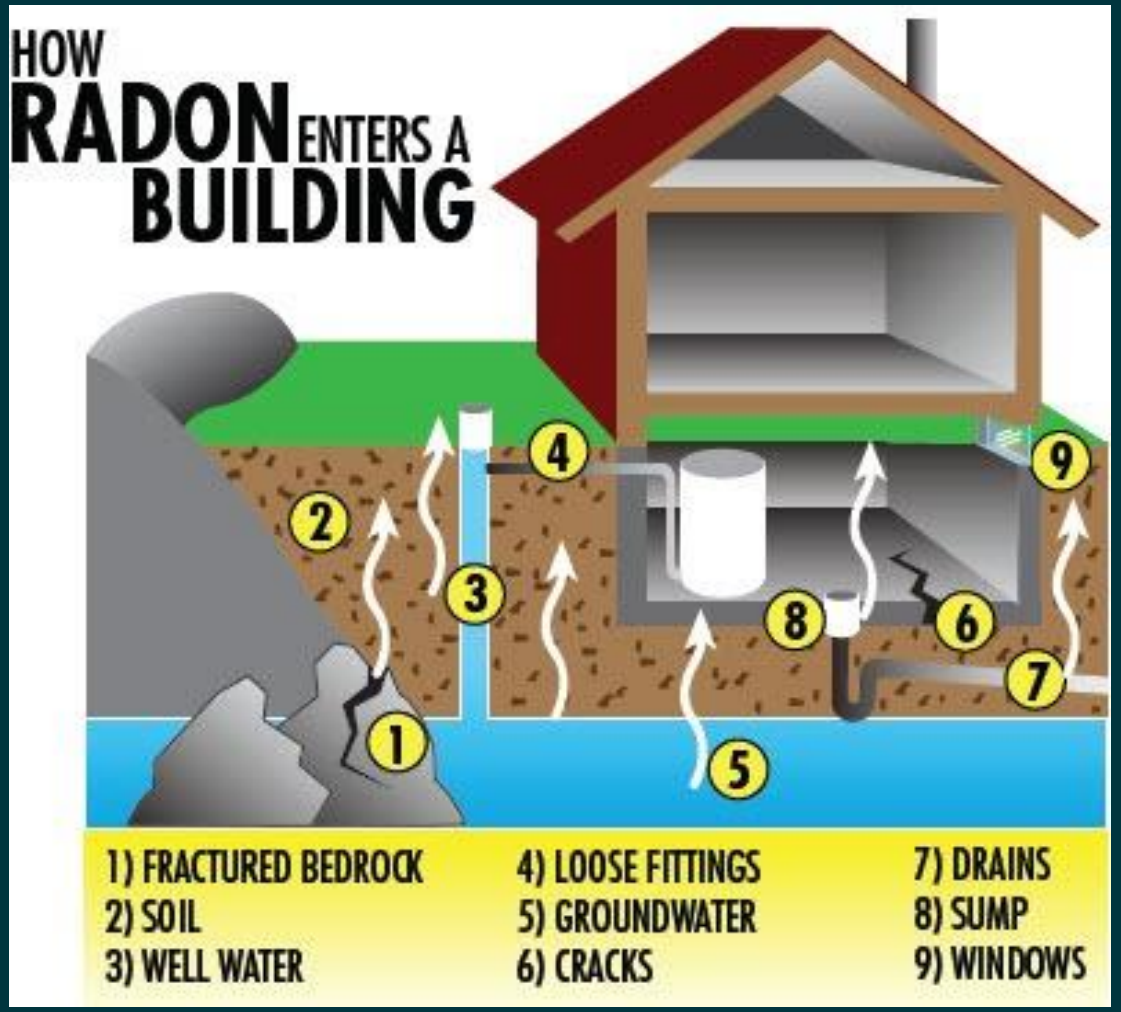


Interval	Description
1) Investigation	Monitoring & investigation of cases in humans
2) Recognition	Control outbreak, treat sick
3) Initiation	Pandemic wave begins when virus has ability to spread person to person
4) Acceleration	Focus on non-pharma interventions and medications to reduce spread/prevent death
5) Deceleration	Pandemic wave slows down when cases consistently decrease; reduce non-pharma interventions
6) Preparation	Monitor for future waves

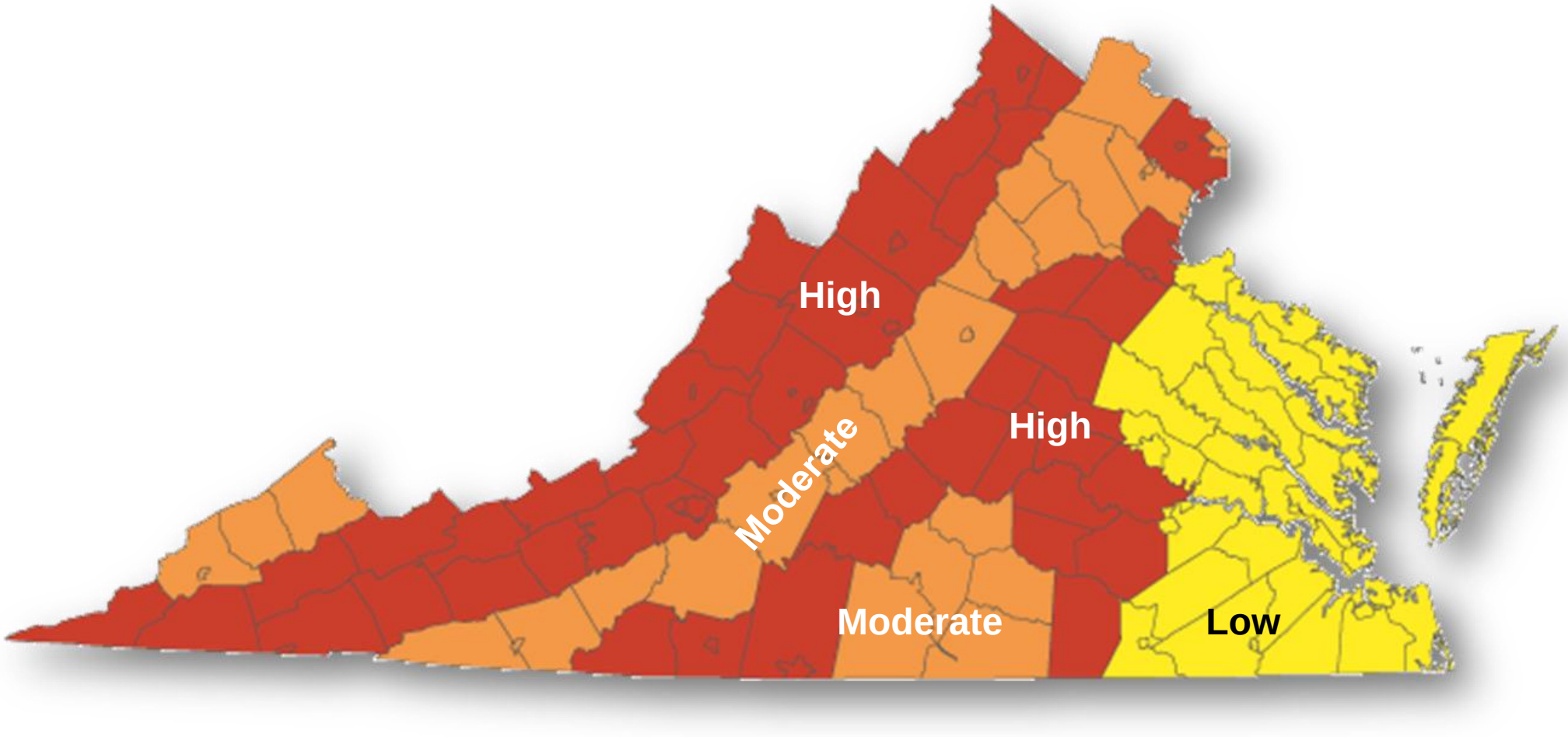
Radon Exposure

What is Radon?

- Colorless, odorless naturally-occurring gas
- Forms by radioactive decay of uranium, thorium or radium
- In Virginia, found in mostly granite & shales (or associated soils & groundwater)



Radon Exposure

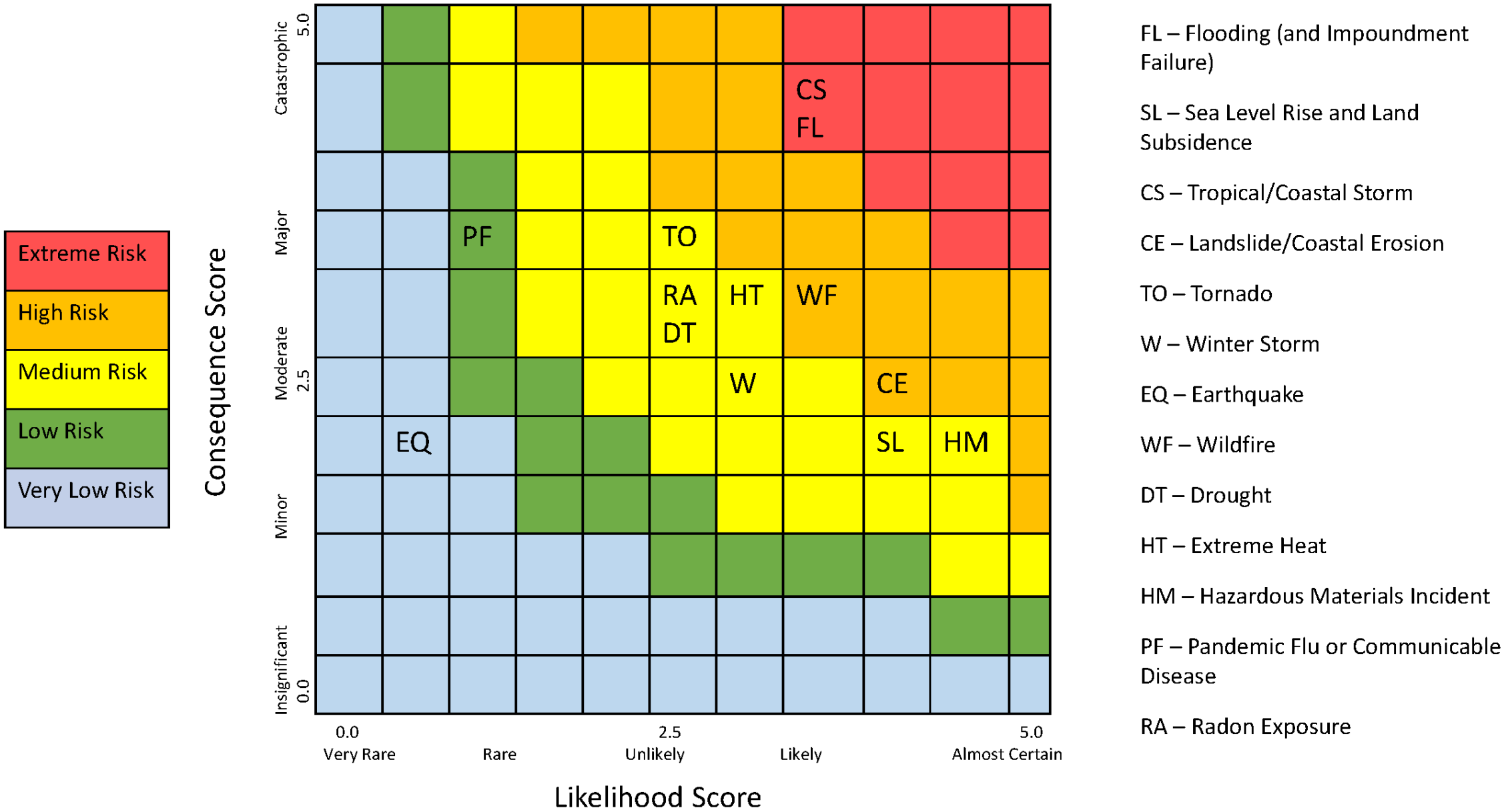


U.S. EPA Map of Radon Zones in Virginia, 1993

Damages & Frequency

Hazard	Average Annual Estimated Losses
Sea Level Rise and Land Subsidence	$130.8 million by 2040
Tropical/Coastal Storm	$86,913,000
Flooding	$44,261,400
Tornado	$24,265,000
Earthquake	$1,119,000
Winter Storm	$805,000
Hazardous Materials Incident	$67,500
Wildfire	$36,900
Extreme Heat	$0
Flooding Due to Impoundment/High Hazard Dam	Not quantified
Landslide/Coastal Erosion	Not quantified
Radon Exposure	Not quantified
Pandemic Flu or Communicable Disease	Not quantified
Drought	Not quantified

Re-ranking the Hazards for 2022



FL – Flooding (and Impoundment Failure)

SL – Sea Level Rise and Land Subsidence

CS – Tropical/Coastal Storm

CE – Landslide/Coastal Erosion

TO – Tornado

W – Winter Storm

EQ – Earthquake

WF – Wildfire

DT – Drought

HT – Extreme Heat

HM – Hazardous Materials Incident

PF – Pandemic Flu or Communicable Disease

RA – Radon Exposure

Re-ranking the Hazards for 2022

CRITICAL HAZARD - HIGH RISK	FLOODING TROPICAL/COASTAL STORM SEA LEVEL RISE AND LAND SUBSIDENCE
CRITICAL HAZARD - MODERATE RISK	WINTER STORM TORNADO HAZARDOUS MATERIALS INCIDENT
NONCRITICAL HAZARD - LOW RISK	EARTHQUAKE WILDFIRE FLOODING DUE TO IMPOUNDMENT FAILURE/HIGH HAZARD DAM PANDEMIC FLU/COMMUNICABLE DISEASE RADON EXPOSURE
NEGLIGIBLE	EXTREME HEAT LANDSLIDE/SHORELINE EROSION DROUGHT

Set Planning Goals

Set Planning Goals

Goal 1: Increase community resiliency by reducing vulnerability to hazards.

Objective 1.1: Reduce damage to all repetitively flooded properties, not just NFIP-insured structures

Objective 1.2: Protect existing and future development

Objective 1.3: Protect critical facilities/infrastructure, including High Hazard Potential Dams

Objective 1.4: Maintain diverse, equitable and inclusive government functions and services throughout the duration of hazard events

Objective 1.5: Reduce hazard-related impacts on daily routines

Objective 1.6: Preserve and enhance benefits of natural areas

Set Planning Goals

Goal 2: Educate the public about hazard vulnerabilities and ways to reduce risk

Objective 2.1: Encourage citizens and businesses ~~property owners~~ to assume responsibility for reducing vulnerability

Objective 2.2: Ensure that information and hazard education opportunities are available to all elements of the communities

Objective 2.3: Pursue public/private partnerships that help facilitate access to hazard-related educational opportunities and gather feedback from citizens

Set Planning Goals

Goal 3: Strengthen and develop partnerships for mitigating hazard impacts

Objective 3.1: Integrate mitigation concepts into local and regional government plans, policies and actions

Objective 3.2: Improve and standardize hazard data collection and mapping

Objective 3.3: Leverage shared resources in pursuit of funding for hazard mitigation projects

Objective 3.4: Develop partnerships among private, local, regional, national, and international organizations

Examining Capabilities – Why and how?

Climate Change

- Social Vulnerability
- Planning
- Codes & Regs
- Response
- Technology
- Communication

Consider existing strategies. Do they span across all community systems?

TYPES OF MITIGATION STRATEGIES

1. PUBLIC EDUCATION & AWARENESS
2. PREVENTION
3. PROPERTY PROTECTION
4. NATURAL RESOURCE PROTECTION
5. STRUCTURAL PROJECTS
6. EMERGENCY SERVICES

Determining Impact on Socially Vulnerable Populations

High, Moderate or Low impact rating is based on the vulnerability information associated with the hazard and Census tract of the proposed action.

Option 1: Where projects were identified in a specific location and/or tied to reducing vulnerability from a single hazard, the hazard-specific ranking for that Census tract was used.

Option 2: Projects geared toward reducing risk community-wide or reducing risk for a wide variety of hazards, such as general outreach, were ranked based on relative NRI social vulnerability of that community versus the percent of counties/cities with lower social vulnerability in Virginia:

Low - less than 40% of other counties/cities have lower social vulnerability

Moderate – 41-75%

High –75-100%.

Option 3: In cases where an action was specifically geared toward socially vulnerable populations within a community, the impact was rated High.

Regional Mitigation Action Plan

1. Use existing or create new Elevation Certificates to collect lowest floor elevation data for flood-prone structures in the region, focusing initially on repetitive loss areas in each community.
2. Use AHAC structure and HRPDC resources to develop additional regional mitigation strategies and initiate annual workshop on mitigation project funding.
3. Analyze and update the platform, availability, and accuracy of HAZUS input data and output results for the purposes of conducting future, more detailed vulnerability analyses.

Regional Mitigation Action Plan

4. Use commercially available radon test kits to determine radon levels in structures. Evaluate radon data against known geological formations in the region to determine geographic variability in vulnerability. End product will be a refined map of radon zones.

5. Partner with VDEM to review repetitive flood loss data from FEMA on a regular basis, update repetitive flood loss area polygons and shapefiles, and analyze data for patterns, errors and mitigation opportunities.

6. Address high and significant hazard dam safety in the region. Assist Virginia DCR with investigating significant hazard dams region-wide for possible reclassification as high hazard. Assist with inspecting high hazard and significant hazard potential dams for necessary retrofits/repairs. Implement retrofits in partnership with dam owners. Use dam inundation data and depths to determine if retrofits to affected critical facilities may be necessary.

Regional Mitigation Action Plan

7. Provide regional leadership regarding the new NFIP's new Risk Rating 2.0 system and renewal policy planning, to include assistance with:

1) Evaluation of rating accuracy and "minus-rated" policies;

2) Messaging and outreach to homeowners;

3) Elevation Certificate correction; and

4) Mitigation assistance for property protection.

Regional Mitigation Action Plan

8. Strengthen existing and create new regional transportation networks and hubs for evacuation and sheltering. The purposes and needs for evacuation and sheltering are evolving, and communities are moving away from traditional, large shelters to house large populations toward a more targeted approach that tries to anticipate disaster-related needs more specifically. Educating the public about these changes is an important component to this type of regional planning.

9. Work with private companies to advance continuity of operations, including but not limited to power, gas, and water service restoration. Mitigation actions may include implementation of system redundancies, mutual aid agreements or other partnerships to address critical capability gaps. Physical retrofits may increase resilience of critical infrastructure, such as burying power lines and provision of dependable backup power to water and wastewater treatment facilities.

Highlights of Jurisdictional Mitigation Action Plans

Over 260 mitigation actions were formulated, revised and evaluated.

Switch to spreadsheet and focus on jurisdictions of participants on the call.

Next Steps and Schedule

- Address public review comments
- Coordinate public comments, VDEM comments and FEMA comments
- Final FEMA approved draft target - ASAP
- Adoption by communities by April 2022

Additional Opportunities for Input

- View and download 2022 draft at:

https://www.hrpdcva.gov/departments/emergency-management/hampton-roads-hazard-mitigation-plan

- Submit comments via email by March 9, 2022 to:

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Thank you.

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