

# Building Flood Resilience in Virginia



**WaterJam 2022**

**Flood Resiliency Funding, Planning, and Implementation Workshop**

**September 15th, 2022**

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# Presentation Outline

- Virginia Coastal Resilience Master Plan
- Community Flood Preparedness Fund
- Virginia Flood Protection Master Plan
- Community Outreach and Engagement Plan

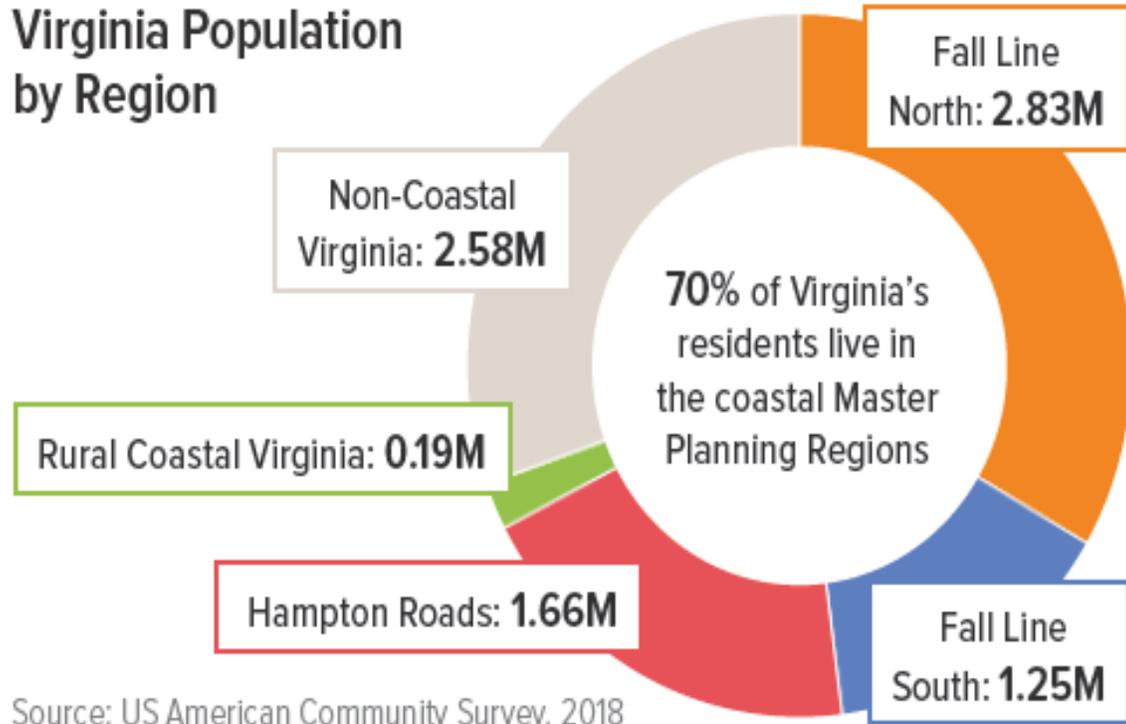


# Virginia Coastal Resilience Master Plan

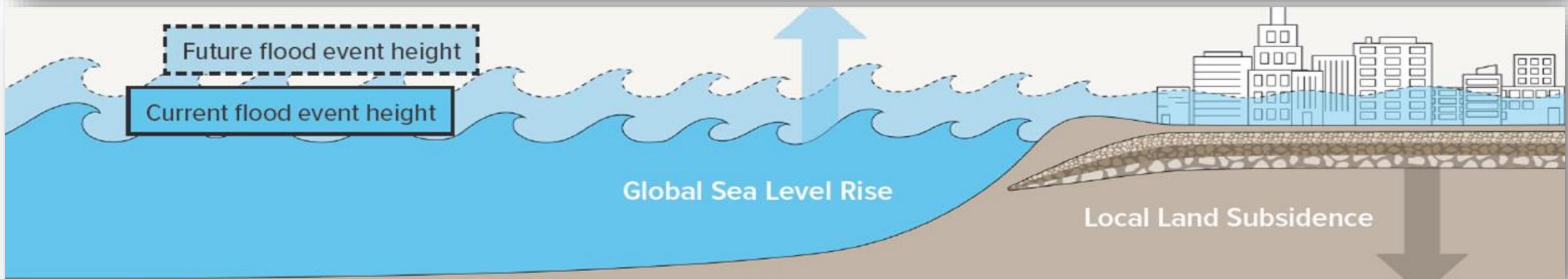
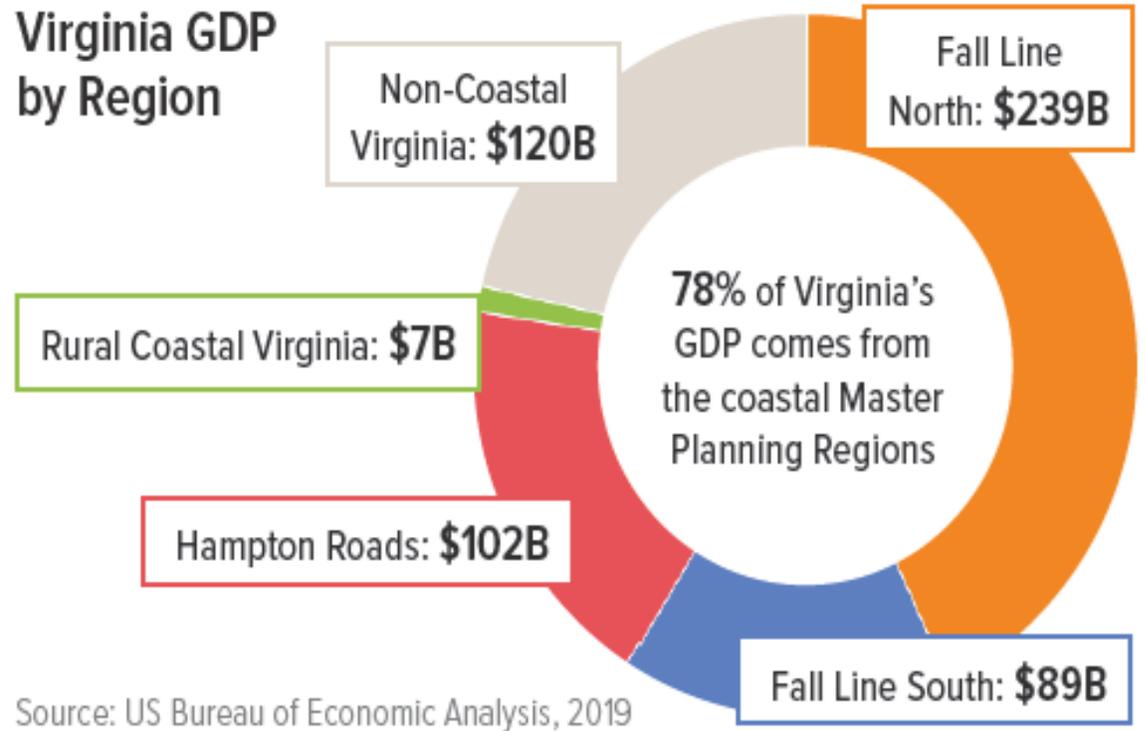
(CRMP)



## Virginia Population by Region



## Virginia GDP by Region



# Impact Summary

## Projected Impacts for the 2080 Water Level Scenarios **Without Action**



Population Exposure to Major Floods +600,000 (+160%)



Building Exposure to Extreme Floods +200,000 (+\$5B AAL)



Roadway Exposure to Chronic Flooding +2,000mi (+460%)



Wetland Inundation 170,000ac (89% of existing)

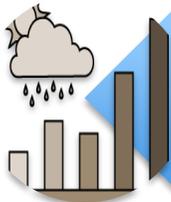
# VA Coastal Resilience Goals



Prioritize Projects



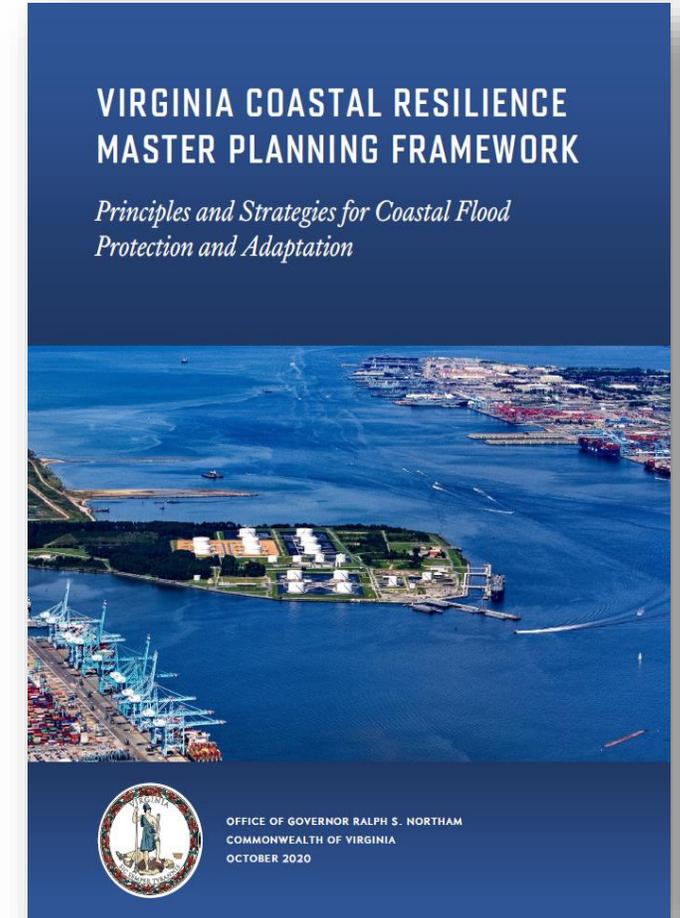
Financing Strategy



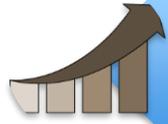
Incorporate Climate Change Projections



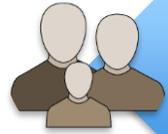
Coordinate Efforts



# VA Coastal Resilience Principles



Best Available Science



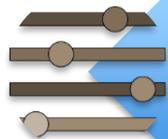
Socioeconomics



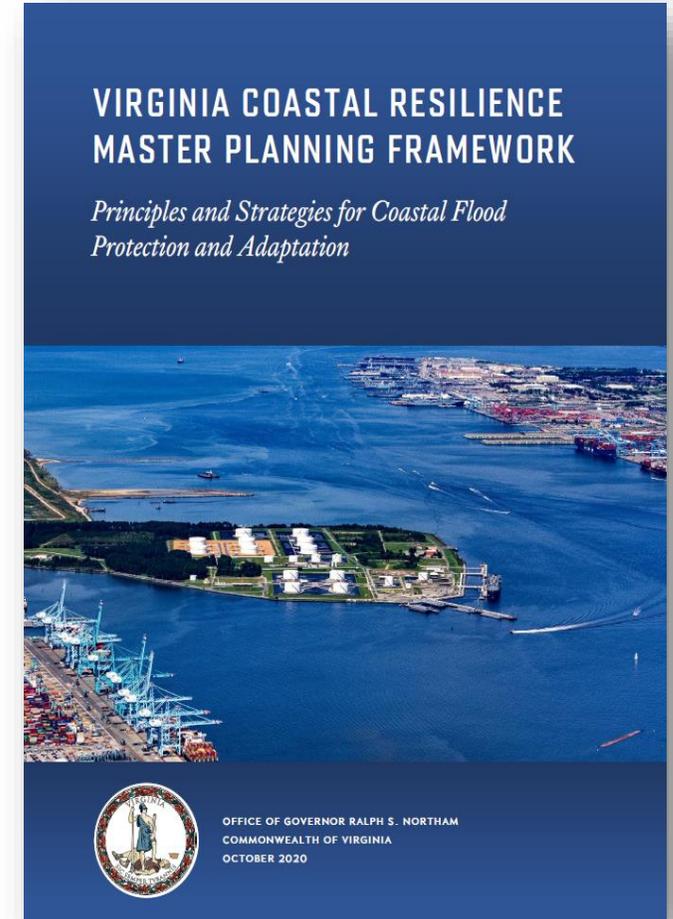
Nature-Based Solutions



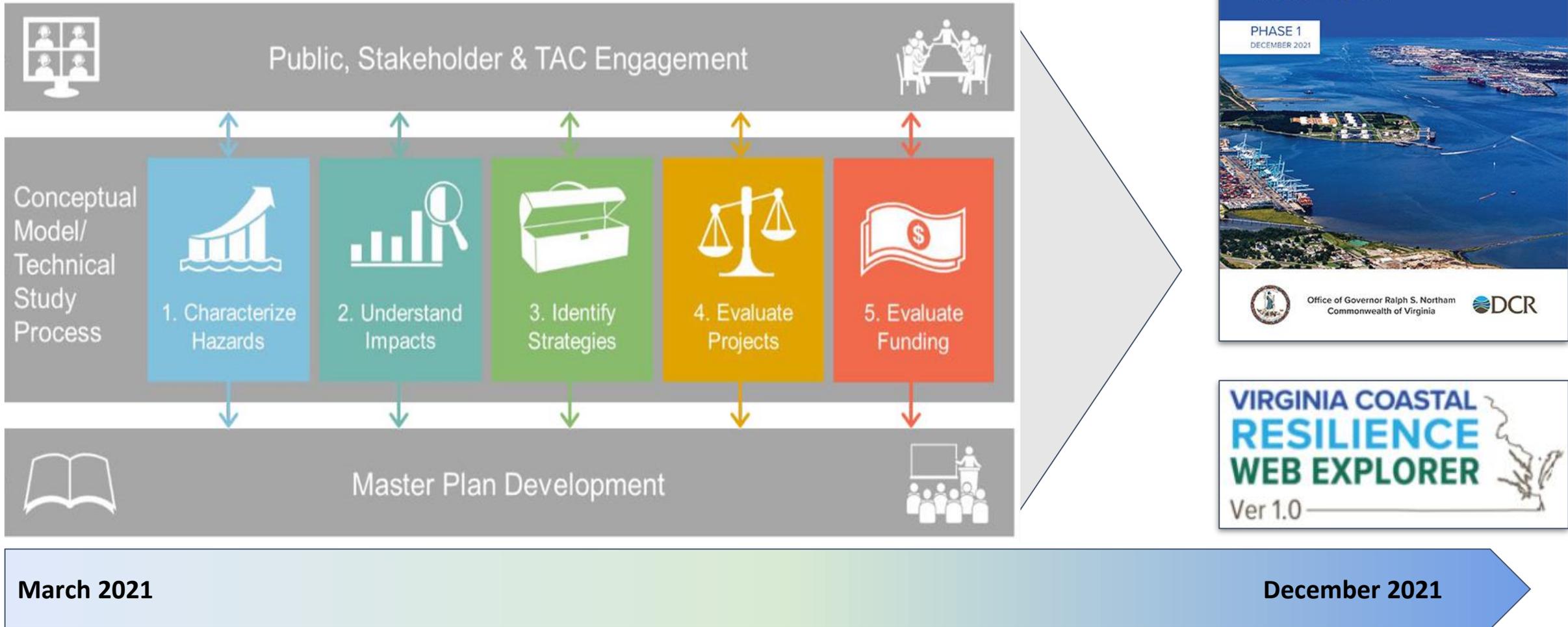
Community and Regional Scale



Cost-Effective Solutions



# CRMP Phase 1 Overview



# Coastal Flood Hazard with SLR [NOAA 2017 Int-High]

Sea level rise increases coastal flood hazards in both extent and frequency. ⓘ

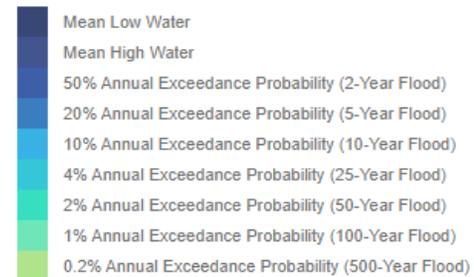
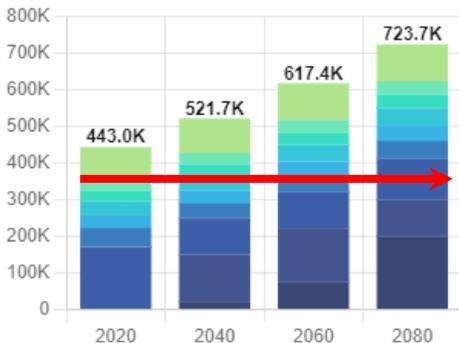
Select Area of Interest:

Commonwealth  Virginia

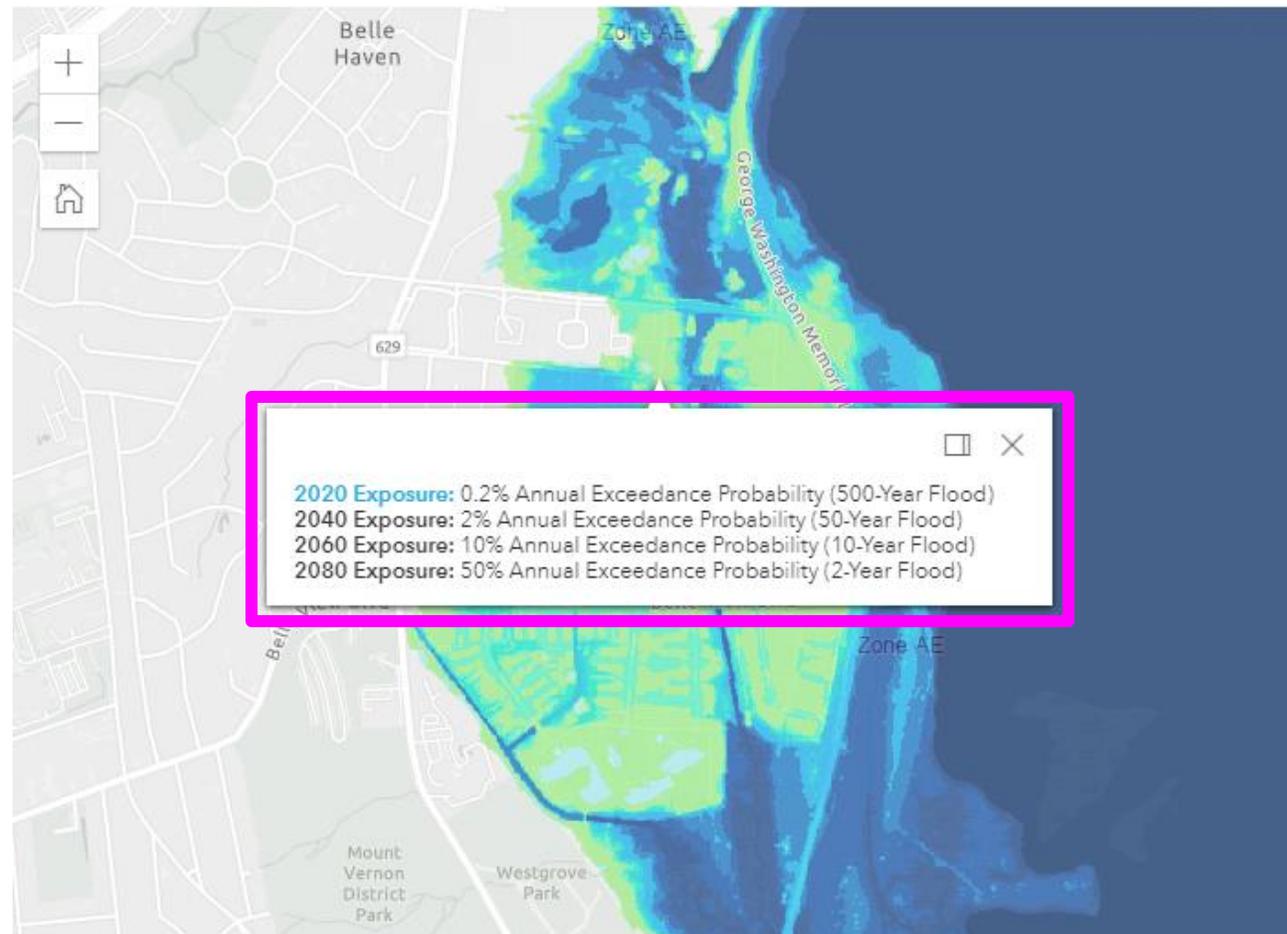
Coastal Flood Time Horizon:

2020 2040 2060 **2080**

Acres of Land Area Inundated Across Flood Event Type



Notes and Limitations

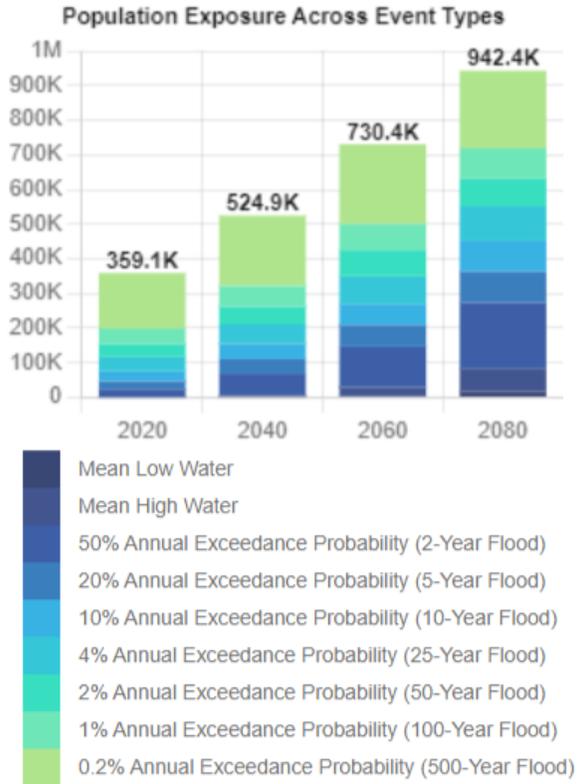
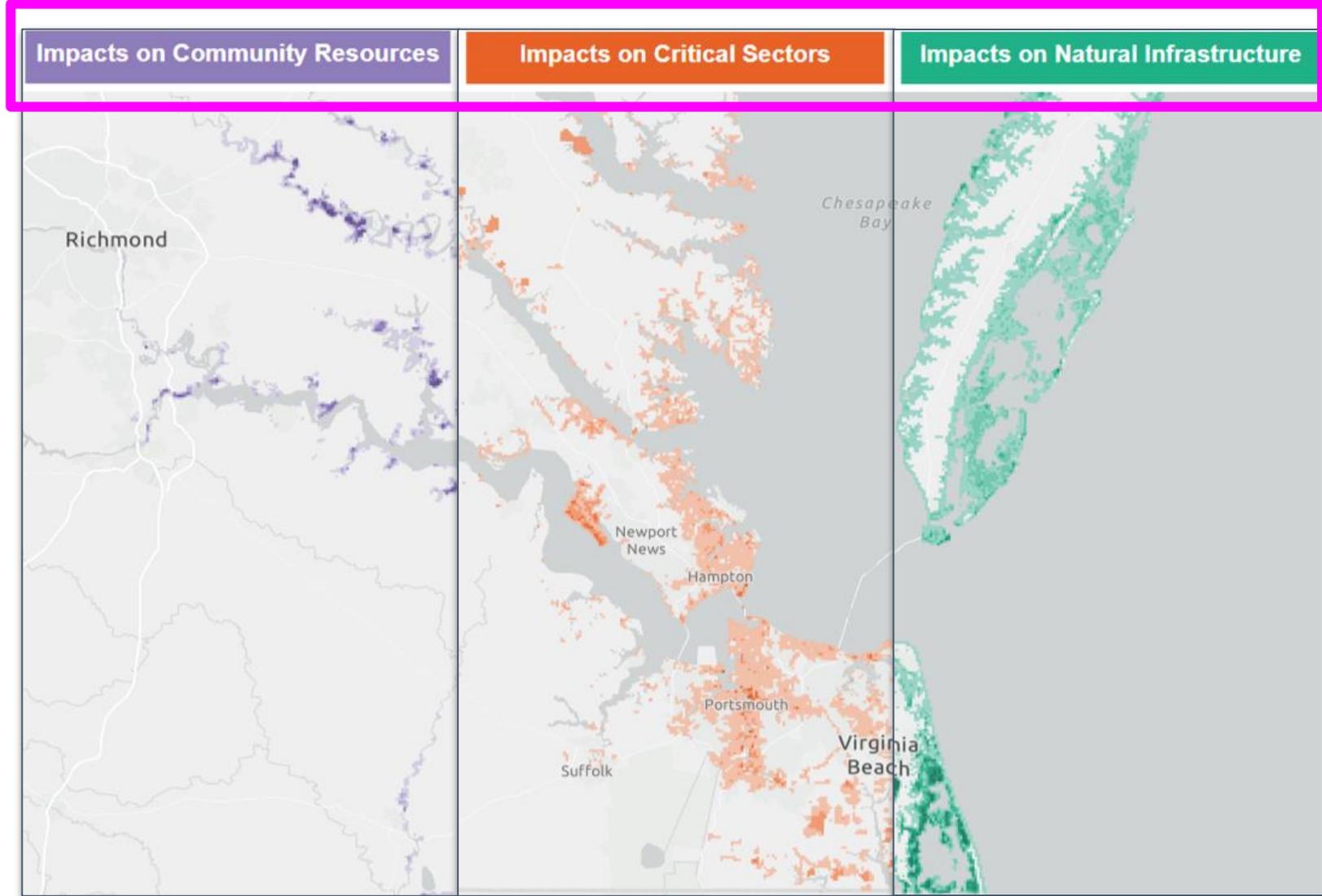


Tabular Hazards Data

AWS Open Data Portal



# Coastal Flood Hazard Impacts

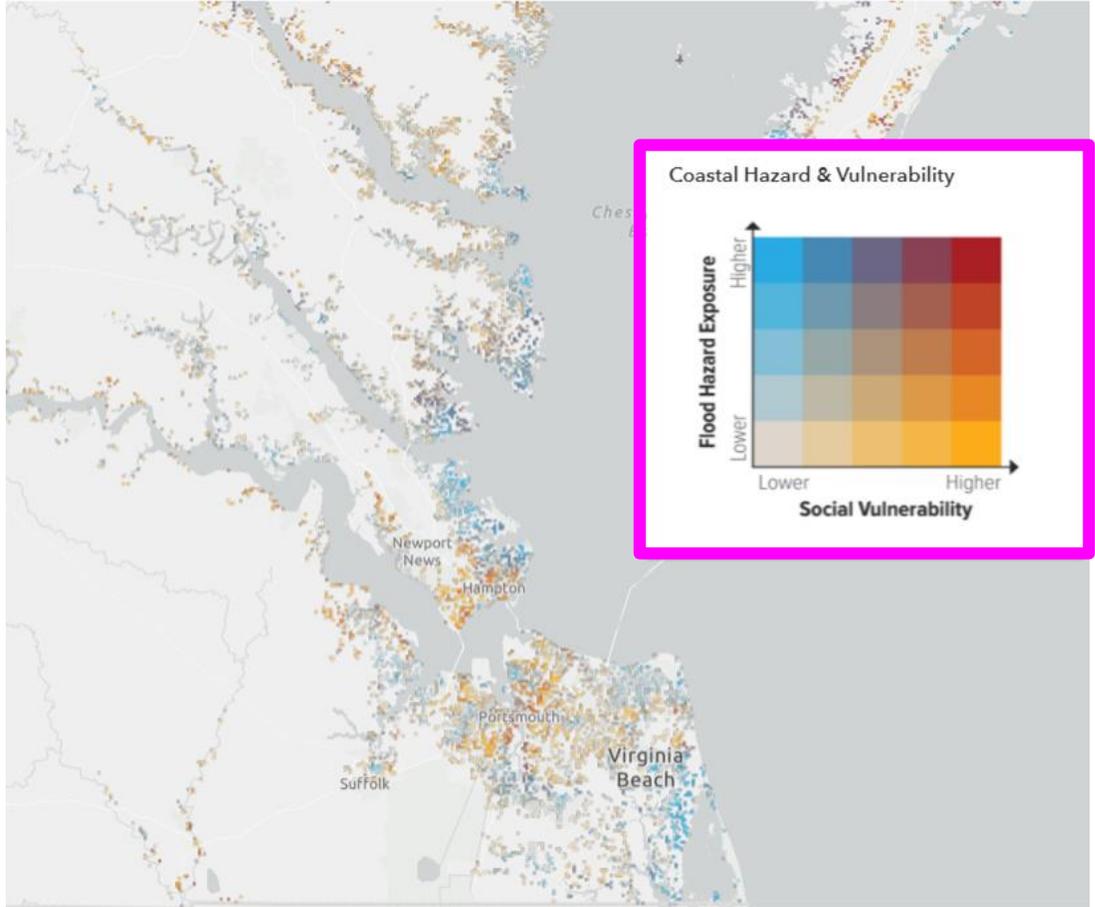
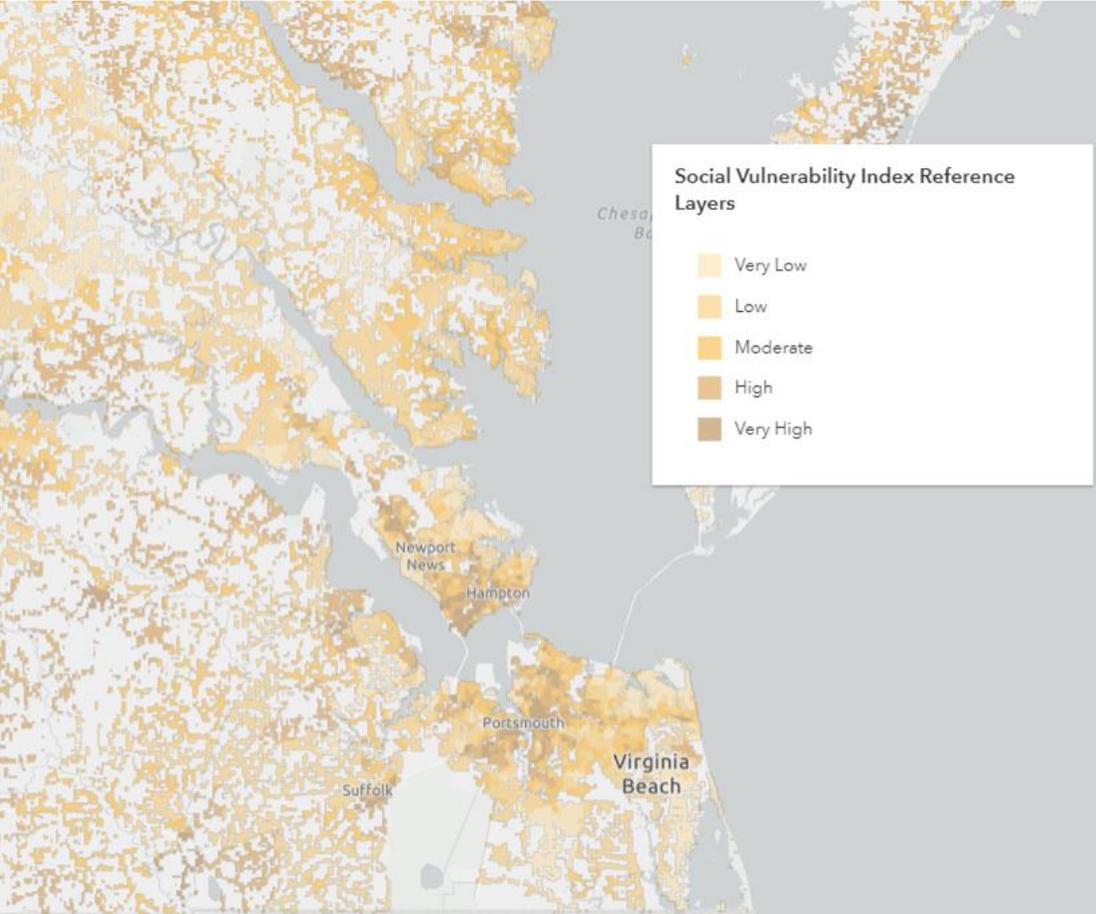


[Tabular Impacts Data](#)

[AWS Open Data Portal](#)



# Community Context



# Building Flood Resilience

**Select Area of Interest:**

Commonwealth: Virginia

**Filters:**

Category: All

Hazard Addressed: All

Project Class: All

[Reset All Filters & Map](#)

**Additional Map Layers:** [Clear Map Layers](#)

- Coastal Floodplains +
- Community Resource Impact Areas +
- Critical Sector Impact Areas +
- Natural Infrastructure Impact Areas +
- Coastal Hazard and Social Vulnerability +

**Search:**  [Clear](#)

Projects and Initiatives (Features: 517, Selected: 0)

<input checked="" type="checkbox"/>	Name
<input type="checkbox"/>	18th Street Drainage Improvements
<input type="checkbox"/>	1. Crow's Nest Peninsula and Estuary Conservation
<input type="checkbox"/>	2019 FMA
<input type="checkbox"/>	5th Street Improvements
<input type="checkbox"/>	Aberdeen Gardens Drainage Improvements
<input type="checkbox"/>	Aberdeen Road Disconnect Wet Pond
<input type="checkbox"/>	Aberdeen School Neighborhood Park ED Wetland Retrofit
<input type="checkbox"/>	Amherst Road Wetlands
<input type="checkbox"/>	Annual Coastal Bays seagrass restoration
<input type="checkbox"/>	Appomattox River Trail (blueway and greenway)
<input type="checkbox"/>	Aquatic Center Parking Lot
<input type="checkbox"/>	Aquisition of LiDAR Data
<input type="checkbox"/>	Aragona Drainage Improvements



[Tabular Project Data](#)

[Open Data Portal](#)



# Funding Flood Resilience

VA Funding for Projects (Features: 96, Selected: 0)

Name	Administering Office	Funding Source	Funding Type	Purpose
Addressing the Impacts of Multiple Stressors on Shellfish Aquaculture Through Research/Industry Partnerships	National Oceanic and Atmospheric Administration (NOAA) Oceanic and Atmospheric Research	NOAA	Federal	Supports: establishing, continuing, and/or expanding collaboration between researchers and shellfish growers in order to address how acidification and at least one other environmental stressor affects the U.S. shellfish aquaculture industry. Project priorities of this funding opportunity are to (1) build or strengthen relationships between the shellfish aquaculture industry and aquaculture research community (including university, industry, private sector, tribal, state, and/or federal scientists represent perspectives), (2) develop scientific knowledge on the impact of ocean and coastal acidification in combination with other stressors on shellfish aquaculture, and (3) create data products, tools, technologies, management practices, or other deliverables that are applicable to building resilience within the shellfish aquaculture sector.
Building Resilience Against Climate Effects: Implementing and Evaluating Adaptation Strategies that Protect and Promote Human Health	National Center for Environmental Health	CDC	Federal	Supports: the building and enhancement of the resilience of U.S. cities and states to the health impacts of climate change through overarching strategies. These strategies include 1) collaboration with stakeholders to create a Climate Impact Compendium data on local climate projections, health effects, social determinants of health, and current adaptive capacity; 2) implementation and evaluation of adaptation actions that address the threats identified in the Compendium; and 3) use and dissemination of evidence to improve adaptation actions and enhance understanding of effective climate resilience adaptations in public health and research.
Bureau of Indian Affairs (BIA) Tribal Climate Resilience Program	Department of Interior, Bureau of Indian Affairs (BIA), Trust Services, Tribal Climate Resilience Program	BIA	Federal	Supports: tribal resilience and ocean and coastal management and planning. The Tribal Climate Resilience Program supports tribes to prepare for climate change impacts on tribal trust and trust resources, economies, infrastructure, and human health and safety. Available Funding: - Adaptation planning - Ocean and Coastal Management Planning - Capacity Building - Relocation, Mitigation, or Protect-in-Place Planning - Internships and Youth Engagement



[Tabular Funding Data](#)

[Open Data Portal](#)



# Community Flood Preparedness Fund

(CFPF)

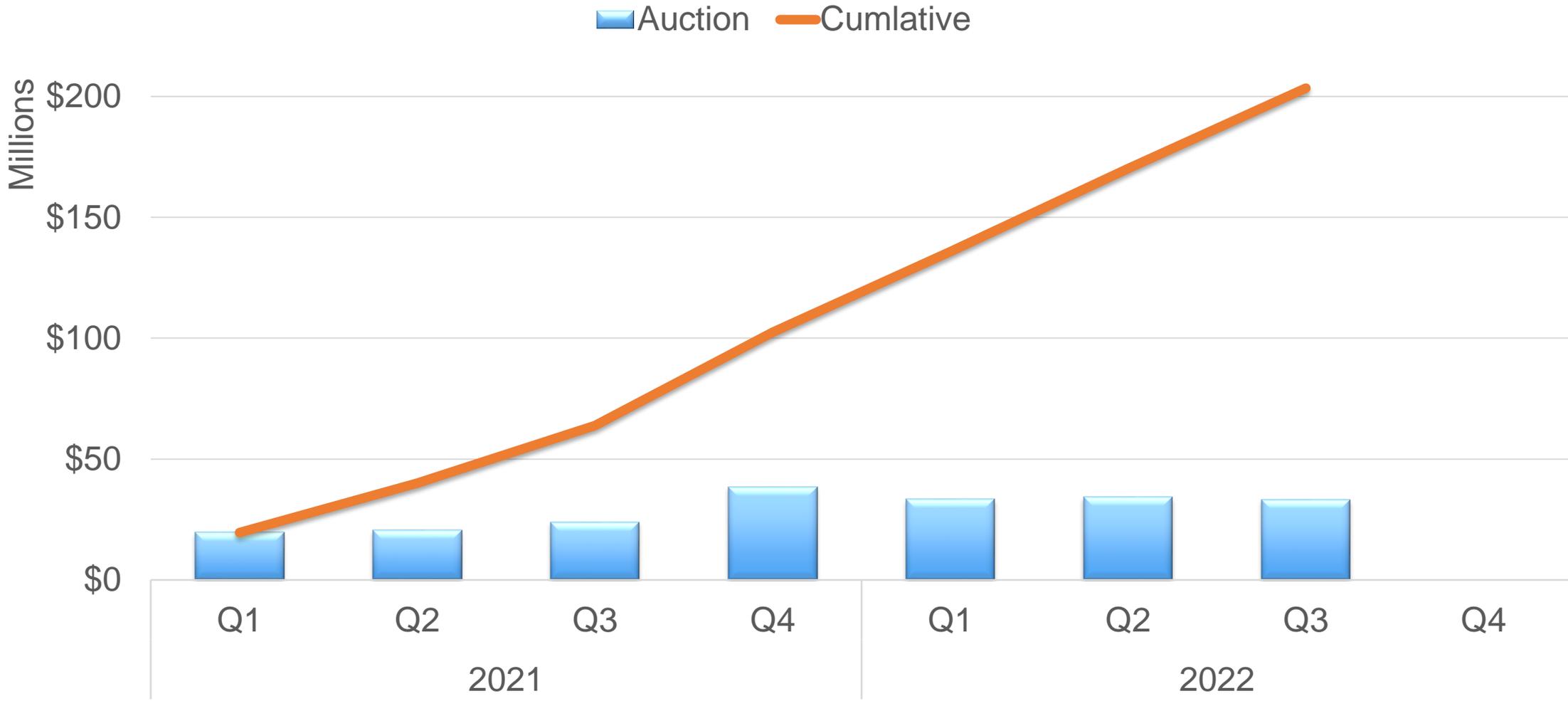


# CFPF Overview [§ 10.1-603.25]

- Non reverting fund developed as a continuation of Virginia Shoreline Resiliency Fund
- Funded by 45% of the sale of emissions allowances pursuant to subdivision C 1 of § 10.1-1330 [RGGI]  
*Additional Funding Sources: General Assembly, Loan Repayments, Investment Income, Federal Grants, and other forms*
- Purposes of enhancing flood prevention or protection and coastal resilience across the Commonwealth
- No less than 25 percent of Fund each year shall be for low-income geographic areas or designated opportunity zones.
- Priority to community-scale activities that use nature-based solutions to reduce flood risk.



# CFPF Funding via RGGI



# How CFPF Funds Are Used

- Grants (and Future Loans) to Localities and Communities
- Coastal Resilience Master Plan
  - Phase One Completed December 2021
  - Phase Two to Be Completed by 2024
- Required Flood Protection (Resilience) Planning Across Virginia
- DCR Staff that Support CFPF Related Activities and Resilience Planning



# CFPF Grant Overview

3-yr Period of Performance

Applicant

Town

City

County

Region

Activity

Project

Plan

Green

Gray

Hybrid

Planning  
and  
Capacity  
Building

Studies



# CFPF Grants

## Applicant Match

Category	Sub-Type	CFPF	Match	Low-Income Geographic Area	
				CFPF	Match
Plans	Planning and Capacity Building	50%	50%	90%	10%
	Flood Prevention and Protection Studies	75%	25%	90%	10%
Project	Nature-Based Solutions	70%	30%	80%	20%
	Hybrid Solutions	60%	40%	65%	35%
	Other Projects	50%	50%	55%	45%



# CFPF Awards, Summary

	Round 1	Round 2	Totals	Round 3
<b>Funds Advertised</b>	<b>\$18M</b>	<b>\$17M</b>	<b>\$35M</b>	<b>\$40M</b>
<b>Funds Requested</b>	<b>\$14.5M [32]</b>	<b>\$29.7M [37]</b>	<b>\$44.2M [69]</b>	<b>\$91M [64]</b>
<b>Funds Awarded</b>	<b>\$7.8M [19]</b>	<b>\$24.5M [30]</b>	<b>\$32.3M [49]</b>	<b>TBD</b>
<i>Low Income Area</i>	<i>\$3.8M (48%) [11]</i>	<i>\$19.7M (79%) [15]</i>	<i>\$23.5M (72%) [26]</i>	<i>TBD</i>
<i>Non Low Income Area</i>	<i>\$4.0M [8]</i>	<i>\$4.8M [15]</i>	<i>\$8.8M [23]</i>	<i>TBD</i>

*Note: the balance of round one not awarded was used to fund applications in round 2.*



# CFPF Awards, Distribution

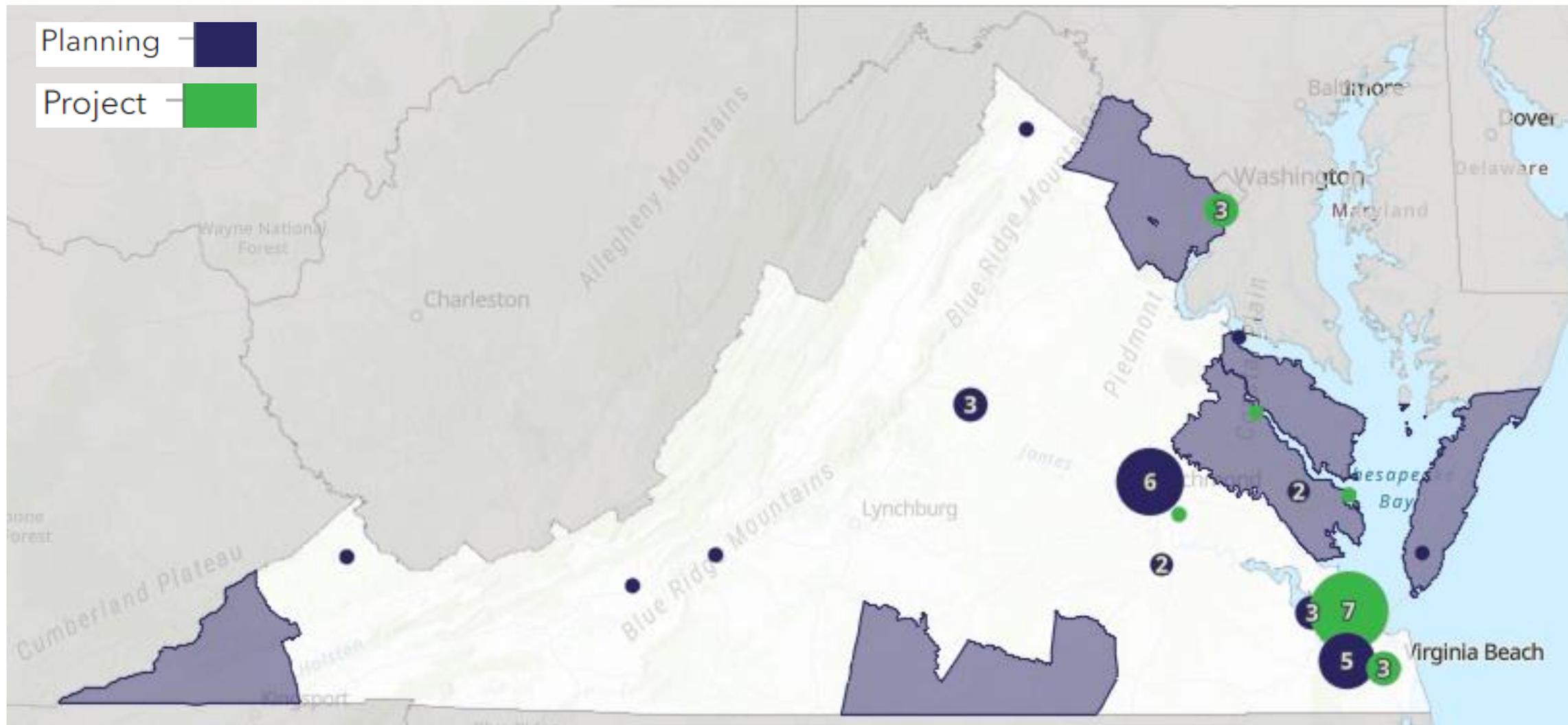
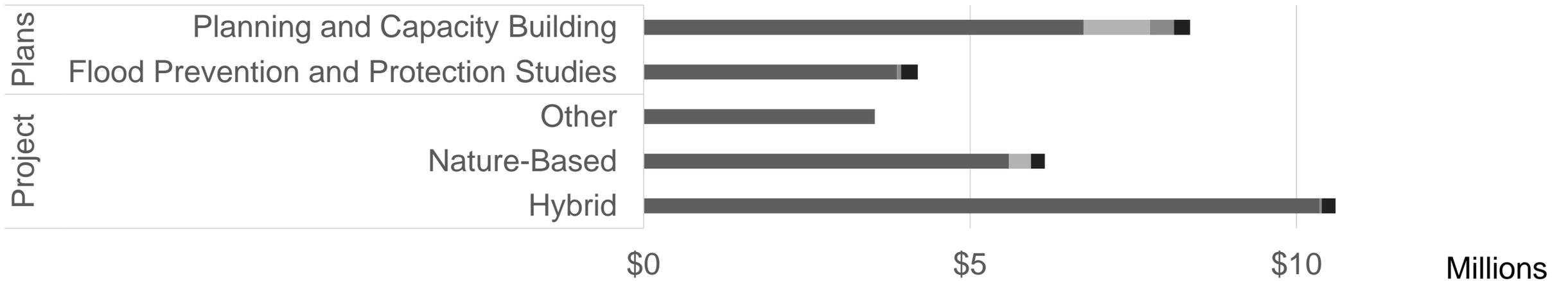
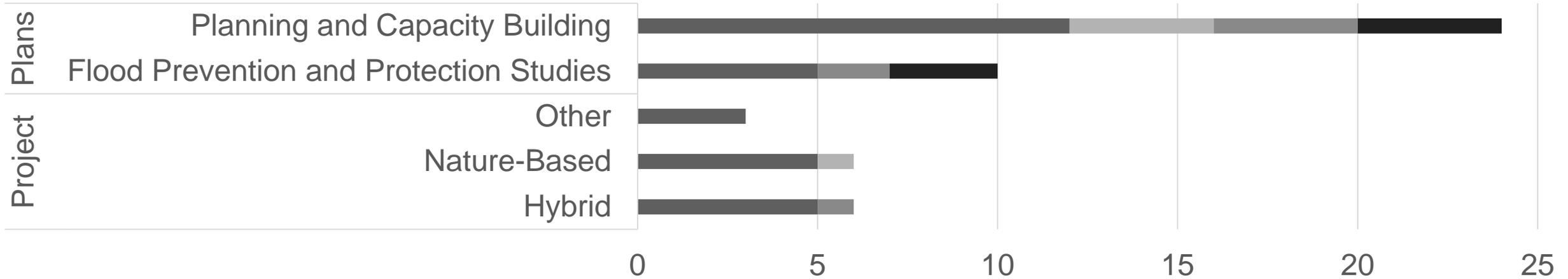


Figure from VCNVA <https://vcnva.org/cfpf-projects-virginia/>



# CFPF Awards, Distribution



# CFPF Resilience Plans

## Required for Project Funding

- ✓ Project-based plan focused on flood control and resilience.
- ✓ Incorporates nature-based infrastructure to the maximum extent possible.
- ✓ Includes considerations of all parts of a locality regardless of socioeconomic status or race.
- ✓ Includes coordination with other local and inter-jurisdictional projects, plans, and activities and has a clearly articulated timeline or phasing for plan implementation.
- ✓ Based on the best available science, and incorporates climate change, sea level rise, storm surge (where appropriate), and current flood maps.



# CFPF Grant Update

## Round 3

- Opened January 2022
- \$40 million advertised
- 64 applications for \$91 million
- Award announcements anticipated CY2022 Q3

## Round 4

- Schedule TBD
- Amount TBD
- Revised grant manual with public comment
- Establish grant application review panel



# Resilient Virginia Revolving Fund [§10.1-603.29]

- Established 2022 by HB1309 (Bulova) / SB 756 (Lewis)
- Fund is capitalized with \$25 million from the CFPF
- Loans and grants to localities for resilience projects via Virginia Resources Authority (VRA)
- DCR will administer and will develop guidelines with VRA
- Anticipate accepting first round of applications early CY2023
- Transparency:
  - Fund guidelines/manuals will be put out for public comment
  - Review committee will be established to review applications



# Virginia Flood Protection Master Plan

(VFPMP)



# Virginia Flood Protection Master Plan [§ 10.1-602]

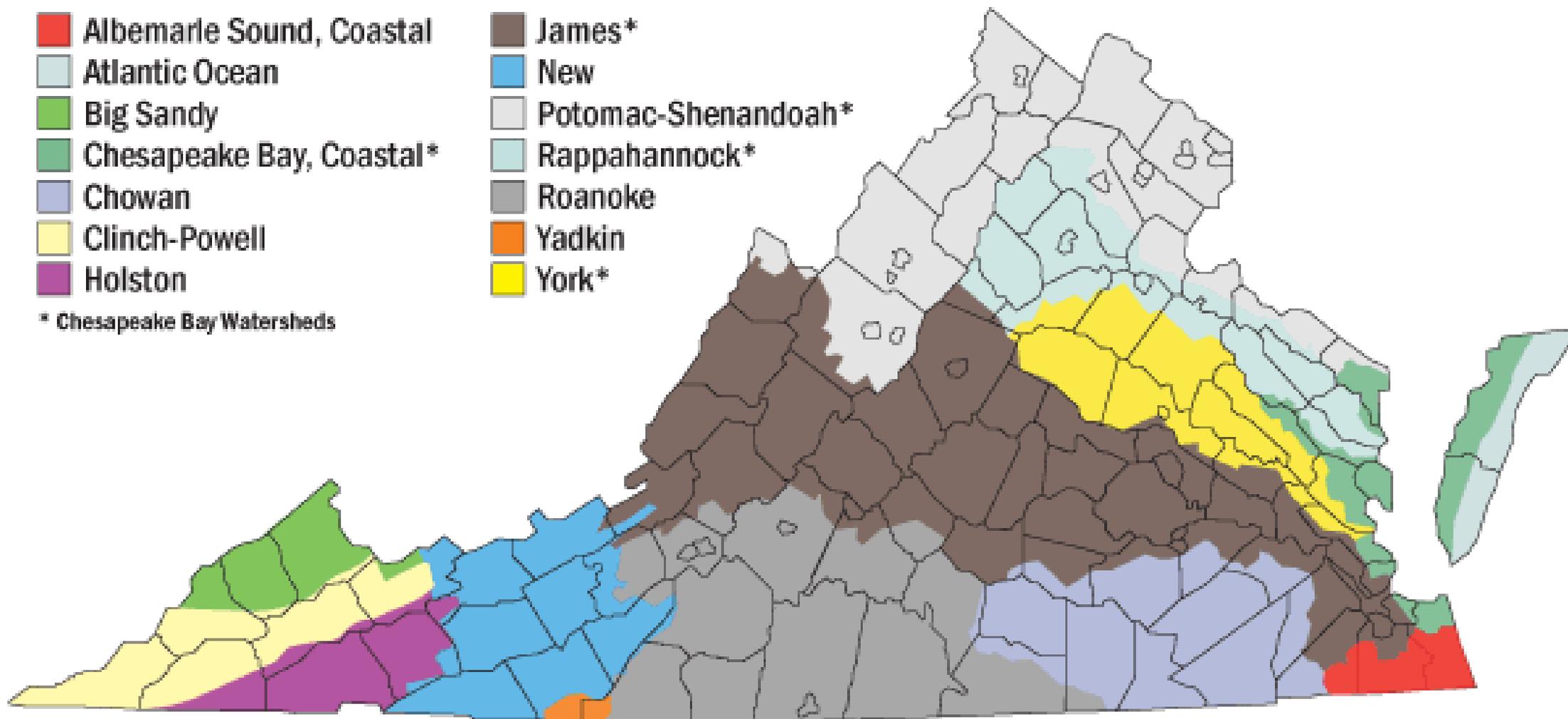
- The Plan shall include, at a minimum:
  - An inventory of flood-prone areas;
  - An inventory of flood protection studies;
  - A record of flood damages;
  - Strategies to prevent or mitigate flood damage; and
  - The collection and distribution of information relating to flooding and floodplain management.
- Due no later than Dec 31, 2026 (5-year update cycle)
- Must integrate Coastal Resilience Master Plan
- Must use a watershed based approach



# Major River Basins

- |  |   |
|--|---|
|  Albemarle Sound, Coastal |  James*              |
|  Atlantic Ocean           |  New                 |
|  Big Sandy                |  Potomac-Shenandoah* |
|  Chesapeake Bay, Coastal* |  Rappahannock*       |
|  Chowan                   |  Roanoke             |
|  Clinch-Powell            |  Yadkin              |
|  Holston                  |  York*               |

\* Chesapeake Bay Watersheds



# Community Outreach and Engagement Plan

(COEP)



# CRMP Public, TAC, & Stakeholder Engagement

Communication, Coordination, Collaboration



# Community Outreach and Engagement Plan

[2022 GA HB516/SB551 now [§10.1-659](#)]

The Director of DCR, **jointly with the Director of DOI [DEI]**, and in coordination with the Chief Resilience Officer (CRO) and Special Assistant to the Governor to Coastal Adaptation and Protection (SACAP) shall prepare a **Community Outreach and Engagement Plan** for updates to the Virginia Coastal Resilience Master Plan and for development and updates to the Virginia Flood Protection Master Plan (the Plans)

The outreach and engagement plan shall **strive** for meaningful involvement by ensuring that

- (i) affected and vulnerable community residents have **access and opportunity to participate** in the full cycle of the decision-making process about the development of and updates to the Plans, and
- (ii) **decision-makers shall seek out and consider such participation**, allowing the views and perspectives of community residents to shape and influence decisions.



# Action – Solicit Input on the Plan

[2022 GA HB516/SB551 now [§10.1-659](#)]

The Department shall seek input to the Community Outreach and Engagement Plan from representatives of:

Virginia Indian  
Tribes

Community-  
Based  
Organizations

The Public Health  
Sector

Nongovernmental  
Organizations

Civil Rights  
Organizations

Communities  
Impacted by  
Recurring  
Flooding

VDEM Equity  
Working Group

General Public



# Community Outreach and Engagement Plan (COEP)

## Schedule

- **Current Status**
  - Preliminary Draft Community Outreach and Engagement Plan
- **October 2022**
  - Release Draft Community Outreach and Engagement Plan for a 30-day Public Comment via Virginia Regulatory Town Hall
- **December 2022**
  - Final Community Outreach and Engagement Plan Published



# QUESTIONS

## **Division Director**

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## **Dam Safety**

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## **NFIP**

[Angela.Davis@dcr.Virginia.gov](mailto:Angela.Davis@dcr.Virginia.gov)

## **Resilience Planning**

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## **Grants**

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<https://www.dcr.virginia.gov/dam-safety-and-floodplains/>

