

# **Current State of Flood Resilience in Virginia**

Department of Conservation and Recreation  
Division of Dam Safety and Floodplain Management  
Matt Dalon – Resilience Planning Program Manager

# Department of Conservation and Recreation

Per Virginia Code §10.1 – 602, 658, 659

- Coordinator of all flood protection programs and activities in the Commonwealth
- Develop, administer, implement, and integrate the “Plans” (CRMP and VFPMP)
- Flood waters disregard jurisdictional boundaries, and the public interest requires the management of flood-prone areas in a manner which prevents injuries to persons, damage to property, and pollution of state waters.

# Chief Resilience Officer (CRO)

## Biennial Status of Flood Resilience Report

- Established by HB517 (Bulova)
- July 1, 2023 and every two years thereafter, CRO must report to Governor and General Assembly on the status of flood resilience in the Commonwealth.
- The report shall serve as an evaluation of flood protection for critical infrastructure, including human and natural infrastructure. The report shall identify risks to critical transportation, energy, communication, water and food supply, waste management, health, and emergency services infrastructure. The report shall also include the status of flood resilience planning. In preparing the report, the Chief Resilience Officer shall also coordinate with the Director of Diversity, Equity, and Inclusion and shall be assisted by all relevant Secretariats and agencies.

# Coastal Resilience Master Plan (CRMP)

- Codified by HB516 (Bulova) / SB551 (Marsden)
- Special Advisor for Coastal Adaptation and Protection, in coordination with DCR Director, shall update CRMP to incorporate all major flood hazards, including precipitation-driven flooding;
- A list of all projects considered and an update of the status of all projects previously implemented;
- A comprehensive risk assessment of critical human and natural infrastructure.
- DCR is the lead administrator and required to implement
- Due no later than December 31, 2024 and updated at least every 5 years

# Virginia Coastal Resilience Technical Advisory Committee

- Established by HB516 (Bulova) / SB551 (Marsden) to assist with developing, updating, and implementing the Virginia Coastal Resilience Master Plan.
- Required to meet quarterly
- The Committee shall be comprised of
  - representatives of state agencies
  - coastal planning district commissions,
  - regional commissions,
  - academic advisors,
  - and any other representatives as needed.

# Virginia Flood Protection Master Plan (VFPMP)

- Existing plan w/requirement for update every 5 years
- Must use a watershed-based approach
- Immediate challenge is availability of types of data needed - data are more available for coastal region and CRMP
- Must integrate Coastal Resilience Master Plan
- Other requirements contained in 10.1-658
- DCR is the lead administrator and required to implement
- Due no later than Dec 31, 2026

# Community Outreach and Engagement Plan

- Established by HB516 (Bulova) / SB551 (Marsden)
- DCR Director, jointly with the DE&I Director, and in coordination with CRO and 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)
- Public comment period closes 1/31/23

# Annual Flood Resilience and Preparedness Coordination Meetings

- Existing requirement, modified and required to meet annually by HB516 (Bulova) / SB551 (Marsden)
- The Director and either, in coordination with the Special Assistant to the Governor for Coastal Adaptation and Protection or and the Chief Resilience Officer, shall jointly hold meetings of representatives of the programs, entities, and localities described in subsection A at least annually in order to determine, coordinate, and prioritize the Commonwealth's efforts and expenditures to increase flooding resilience and flood preparedness and to implement the Virginia Coastal Resilience Master Plan and the Virginia Flood Protection Master Plan.
- The Department shall review any revisions to the Virginia Flood Protection Master Plan and provide an update on the progress of the implementation of the Virginia Coastal Resilience Master Plan at any such meetings.
- The Department shall cooperate with other public and private agencies having flood plain management programs and shall coordinate its responsibilities under this article and any other law.

# Community Flood Preparedness Fund (CFPF)

§ 10.1-603.25

- Continuation of Virginia Shoreline Resiliency Fund
- Per statute, moneys in the Fund shall be used solely for the purposes of enhancing flood prevention or protection and coastal resilience as required by this article.”
- Moneys in the Fund may be used to mitigate future flood damage and to assist inland and coastal communities across the Commonwealth that are subject to recurrent or repetitive flooding.
- No less than 25 percent of the moneys disbursed from the Fund each year shall be used for projects in low-income geographic areas.
- Priority shall be given to projects that implement community-scale hazard mitigation activities that use nature-based solutions to reduce flood risk.

# Community Flood Preparedness Fund (CFPF)

§ 10.1-603.25

## CFPF Round 3

- Initially advertised for \$40 million, later expanded to \$70 million; DCR received 64 applications for nearly \$93 million
- First group of awards announced end of September 2022: 27 Awards totaling \$13.6 million
- 32 proposals totaling \$68 million in requests placed into supplemental review
- DCR met with multiple applicants to refine applications and provide Department with additional information
- 24 applications resubmitted for review by November 30 deadline
- Department announced 22 additional awards for \$51.7 million on December 30, 2022
- Resubmitted applications and scoring [posted on DCR website](#)

## CFPF Round 4

- Amount TBD
- Draft manual for public comment CY2023Q1
- Grant application review panel

# Resilient Virginia Revolving Fund (RVRF)

- Established 2022 by HB1309 (Bulova) / SB 756 (Lewis) - § 10.1-603.28 et seq.
- Fund is capitalized with \$25 million from moneys previously allocated to the CFPF and potential additional funding pending 2023 General Assembly
- Will make loans and grants to local governments for resilience projects via Virginia Resources Authority (VRA)
- DCR will administer and will develop guidelines with VRA
- Fund manual released for public comment 2023Q1
- Anticipate accepting first round of applications in CY2023
- Grant application review panel

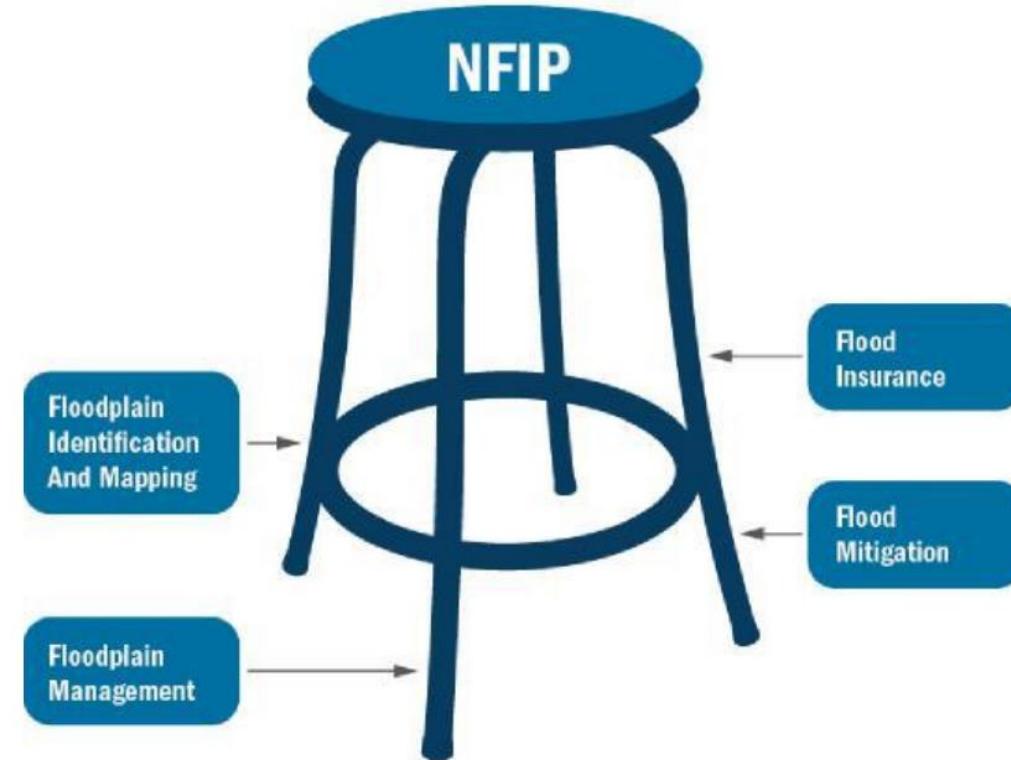
# CFPF and RVRF – working together

- CFPF Round 4 and initial RVRF Grant Manual(s) drafted for public comment, joint application period to follow
- Shift to an annual cycle, combination of grants and loans
- Goal is to have programs run together and compliment each other
- Both programs have tremendous flexibility for project types; both can offer grants and loans.
- Generally, the CFPF is geared towards larger, community-scale projects, while the RVRF is more directed towards individual property and buildings.
- CFPF prefers nature based; has 25% low-income requirement
- RVRF prefers projects that will utilize private industry and/or serve 2+ local gov'ts; has building hazard mitigation carve-out

CFPF	RVRF
<p><u>Community Scale</u></p> <ul style="list-style-type: none"><li>• Flood protection studies</li><li>• Capacity Building</li><li>• Flood Planning Activities</li><li>• Hazard mitigation projects</li><li>• Land acquisition</li><li>• Implementation of land use controls</li></ul>	<p><u>Property Scale</u></p> <ul style="list-style-type: none"><li>• Hazard mitigation of buildings</li><li>• Hazard mitigation of real property</li><li>• Home buyouts and relocation</li><li>• Loans and grants to persons for hazard mitigation and infrastructure improvement projects for resilience purposes</li><li>• Projects identified in the Virginia Flood Protection Master Plan or the Virginia Coastal Resilience Master Plan.</li></ul>

# National Flood Insurance Program

- Federal/State/Local
- Flood Risk Identification
- Floodplain Management
- Flood Mitigation
- Flood Insurance
- CAP-SSSE & CTP



# National Flood Insurance Program

## **Community Assistance Program – State Supportive Services Element (CAP-SSSE)**

Goal 1: Grow local capacity and capability to improve resiliency through floodplain management

Goal 2: Build state floodplain management capability and promote strong state inter-agency coordination and collaboration

Goal 3: Promote the benefits and drive demand for strong floodplain management development standards and insurance

# National Flood Insurance Program

## Cooperating Technical Partners

CTP Program Mission	Risk MAP Mission
Strengthening the effectiveness of the National Flood Insurance Program (NFIP) and supporting FEMA's mitigation objectives by leveraging partnerships.	Leveraging partnerships, Risk MAP focuses on collaboration with state, tribal and local entities.
Delivering high-quality hazard identification and risk assessment products (and data).	Delivering quality data.
Providing outreach support and empowering communities to take action to reduce risk based on informed multi-hazard based data and resources.	Increasing public awareness, which leads to action that reduces risk to life and property.

# National Flood Insurance Program

- VFRIS
- RiskMAP Meetings
- Post-Disaster Assistance
- Annual Risk Reduction Consultation Workshop
- Hazard Mitigation Planning (Floods)
- Equitable Floodplain Management
- Substantial Damage Training & Administrative Procedures



# National Flood Insurance Program

- General Technical Assistance
  - Oversight/Compliance with NFIP, Interagency coordination & collaboration, VA Flood Risk Management Standards, Policy development.
- Local Program Audits (Community Assistance Visit)
- Floodplain Ordinance Adoption/Higer Standards
- Training
  - Intro to Floodplain Management, Ordinances, Elevation Certificates, and Plan Integration.
- CRS – 27 participating localities and growing
- Outreach & Engagement
- Building Codes
- ESA Compliance
- Flood Insurance Roundtable



# State Floodplain Standards

- Implementation of flood protections for state-owned property per EO45
- Designed to ensure National Flood Insurance Program compliance
- Requires adoption of floodplain standards for state projects
- Would apply to all state construction projects in floodplains
- Currently in draft form - working with impacted agencies to finalize before review by FEMA
- Continued option to comply with local floodplain ordinances



Virginia Department of  
Emergency Management

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# Resilience Coordination Working Group

Date: January 31, 2023



# Hazard Mitigation Principles

- To break the cycle of disaster damage, reconstruction, and recurring damage
- Residential, commercial, private/public infrastructure
- Applicable to all hazards, majority of VDEM grants address flooding



# **Resilience Funding Opportunities through VDEM**

## **Annual Competitive Programs**

- Building Resilient Infrastructure and Communities (BRIC)
- Flood Mitigation Assistance (FMA)

## **Post Disaster Programs**

- Hazard Mitigation Grant (HMGP)
- Program Public Assistance (PA)

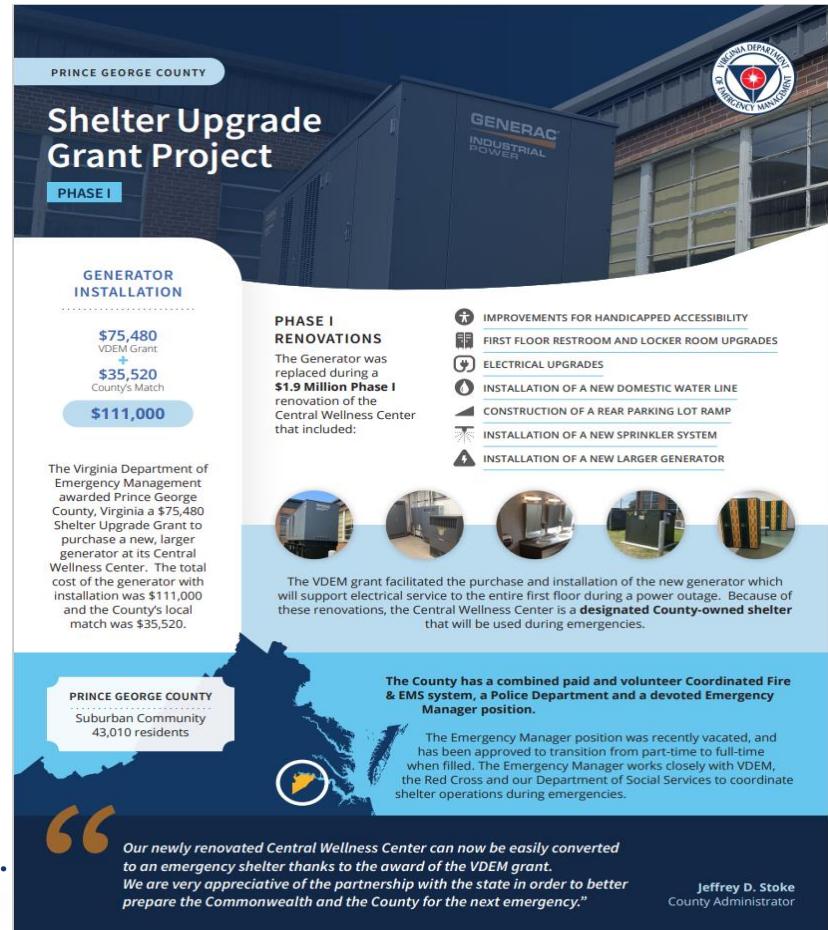
## **Congressional Earmarks**

Pre-Disaster Mitigation (PDM)



# Resilience Funding Opportunities through the Commonwealth

- Emergency Shelter Upgrade Fund



PRINCE GEORGE COUNTY

## Shelter Upgrade Grant Project

PHASE I

**GENERATOR INSTALLATION**

\$75,480 VDEM Grant + \$35,520 County's Match = **\$111,000**

The Virginia Department of Emergency Management awarded Prince George County, Virginia a \$75,480 Shelter Upgrade Grant to purchase a new, larger generator at its Central Wellness Center. The total cost of the generator with installation was \$111,000 and the County's local match was \$35,520.

PRINCE GEORGE COUNTY  
Suburban Community  
43,010 residents

**PHASE I RENOVATIONS**

The Generator was replaced during a \$1.9 Million Phase I renovation of the Central Wellness Center that included:

- IMPROVEMENTS FOR HANDICAPPED ACCESSIBILITY
- FIRST FLOOR RESTROOM AND LOCKER ROOM UPDATES
- ELECTRICAL UPDATES
- INSTALLATION OF A NEW DOMESTIC WATER LINE
- CONSTRUCTION OF A REAR PARKING LOT RAMP
- INSTALLATION OF A NEW SPRINKLER SYSTEM
- INSTALLATION OF A NEW LARGER GENERATOR

The VDEM grant facilitated the purchase and installation of the new generator which will support electrical service to the entire first floor during a power outage. Because of these renovations, the Central Wellness Center is a designated County-owned shelter that will be used during emergencies.

The County has a combined paid and volunteer Coordinated Fire & EMS system, a Police Department and a devoted Emergency Manager position.

The Emergency Manager position was recently vacated, and has been approved to transition from part-time to full-time when filled. The Emergency Manager works closely with VDEM, the Red Cross and our Department of Social Services to coordinate shelter operations during emergencies.

**“**Our newly renovated Central Wellness Center can now be easily converted to an emergency shelter thanks to the award of the VDEM grant. We are very appreciative of the partnership with the state in order to better prepare the Commonwealth and the County for the next emergency.”

Jeffrey D. Stoke  
County Administrator



# Mitigation Planning

To be eligible for FEMA funding...

- There must be a state approved and adopted Hazard Mitigation Plan for which the project is referenced
- There must be a locally approved and adopted Hazard Mitigation Plan or which the project is referenced
- The local government must be in good standing with the NFIP for flood projects



# Regional Plans – PDC Relationship



# VDEM Regions

## Virginia Department of Emergency Management

- VDEM Regional Offices
- Region 1 - Richmond
- Region 2 - Culpeper Area
- Region 3 - Central Virginia
- Region 4 - Southwest
- Region 5 - Hampton Roads
- Region 6 - Roanoke Area
- Region 7 - Northern Virginia

### Virginia Tribes

- State & Federal Recognition
- Virginia Recognition

### Disaster Services Bureau Divisions

- East (Regions 1,2,5 & 7)
- West (Regions 3,4 & 6)

### Region 6

Alleghany County  
Bath County  
Bedford County  
Botetourt County  
City of Buena Vista  
City of Covington  
City of Danville  
City of Lexington  
City of Roanoke  
City of Salem  
Craig County  
Floyd County  
Franklin County  
Henry County  
Highland County

Montgomery County  
Patrick County  
Pittsylvania County  
Roanoke County  
Rockbridge County  
Town of Christiansburg  
Town of Vinton

### Region 4

Bland County  
Buchanan County  
Carroll County  
City of Bristol  
City of Galax  
City of Norton  
City of Radford  
Dickenson County  
Giles County  
Grayson County  
Lee County  
Pulaski County  
Russell County  
Scott County

Smyth County  
Tazewell County  
Washington County  
Wise County  
Wythe County  
Amelia County  
Brunswick County  
Charles City County  
Chesterfield County  
City of Colonial Heights  
City of Emporia  
City of Hopewell  
City of Petersburg  
City of Richmond  
Dinwiddie County  
Essex County  
Goochland County  
Greensville County  
Hanover County  
Henrico County  
King William County  
King and Queen County  
New Kent County  
Nottoway County  
Powhatan County

Prince George County  
Sussex County  
Town of West Point  
Chickahominy Indians  
Eastern Division  
Chickahominy Tribe  
Mattaponi Tribe  
Pamunkey Indian Tribe  
Rappahannock Tribe  
Upper Mattaponi Tribe

Caroline County  
City of Fredericksburg  
City of Winchester  
Clarke County  
Culpeper County  
Fauquier County  
Frederick County  
Greene County  
King George County  
Louisa County  
Madison County  
Orange County

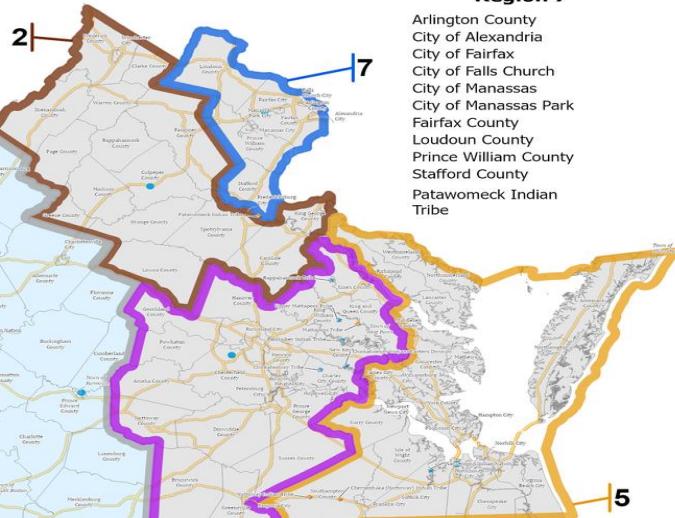
Page County  
Rappahannock County  
Shenandoah County  
Spotsylvania County  
Warren County

### Region 7

Arlington County  
City of Alexandria  
City of Fairfax  
City of Falls Church  
City of Manassas  
City of Manassas Park  
Fairfax County  
Loudoun County  
Prince William County  
Stafford County  
Patawomeck Indian Tribe

### Region 3

Albermarle County  
Amherst County  
Appomattox County  
Augusta County  
Buckingham County  
Campbell County  
Charlotte County  
City of Charlottesville  
City of Harrisonburg  
City of Lynchburg  
City of Staunton  
City of Waynesboro  
Cumberland County  
Fluvanna County  
Halifax County  
Lunenburg County  
Mecklenburg County  
Nelson County  
Prince Edward County  
Rockingham County  
Town of Farmville  
Town of South Boston  
Monacan Indian Nation



### Region 1

Accomack County  
City of Chesapeake  
City of Franklin  
City of Hampton  
City of Newport News  
City of Norfolk  
City of Poquoson  
City of Portsmouth  
City of Suffolk  
City of Virginia Beach  
City of Williamsburg  
Gloucester County  
Isle of Wight County  
James City County  
Lancaster County  
Mathews County  
Middlesex County  
Northampton County  
Northumberland County  
Richmond County  
Southampton County  
Surry County  
Town of Chincoteague  
Westmoreland County  
York County  
Cheroenhaka (Nottoway) Indian Tribe  
Nansemond Indian Nation  
Nottoway Indian Tribe

Map Created: 11/8/2013 | Updated: 12/8/2021



0 12.5 25 50 75 100  
Miles Kilometers



0 20 40 80 120 160  
Miles Kilometers



# How do we get applications

- Eligible applicants apply to FEMA, private property owners apply to the local government.

VDEM provides technical assistance for application development throughout the course of the year

- As disasters happen, so do funding opportunities so we want to support our local governments in being ready
- VDEM provides guidance on the best program based on the local government's project.



# **Focus on most vulnerable localities**



**40 Localities  
Identified Scoring  
Over 70%**



# Funding Cycles

- BRIC and FMA applications are due to FEMA in January each year
- HMGP is a 1 year application period
- Awards from FEMA may take several years from the initial application



# Key Concepts

FEMA programs are voluntary

property owner, locality, state, and FEMA must  
all be on the same page



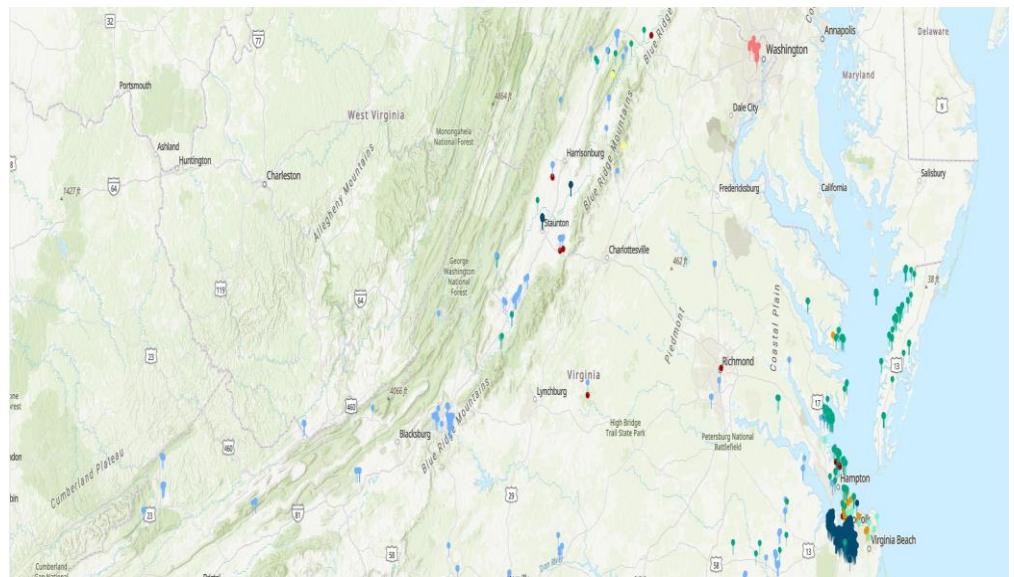
# VDEM Current Grant Portfolio

- 181 projects funded totaling \$204M
- 129 project applications in development or submitted, totaling \$734M



# Ongoing Initiatives

- Coordinating with DCR and DHCD to commemorate mitigation efforts in Virginia following Hurricane Isabel.



# Questions?



Robbie Coates  
804-516-5774  
[Robert.Coates@VDEM.virginia.gov](mailto:Robert.Coates@VDEM.virginia.gov)

# THANK YOU!





# Department of Housing and Community Development

Resiliency Efforts



VIRGINIA DEPARTMENT OF HOUSING  
AND COMMUNITY DEVELOPMENT  
*Partners for Better Communities*



# Ohio Creek Watershed Project Before Construction



VIRGINIA DEPARTMENT OF HOUSING  
AND COMMUNITY DEVELOPMENT  
*Partners for Better Communities*



# Location

As one of the largest populations at risk for sea level rise in the United States, the City of Norfolk's Ohio Creek Watershed project is transforming the Chesterfield Heights Historic District and Grandy Village neighborhoods that frequently faced coastal flooding due to sea level rise and major rainfall events. The project is located in a low-lying portion of Norfolk that surrounds Ohio Creek, a tributary to the Eastern Branch of the Elizabeth River in Norfolk's south-central sector.





# Community Resilience

The project has contributed to economic revitalization by updating infrastructure and natural landscapes to reduce impacts of flooding on businesses and the local workforce.



# Connectivity

With new and improved vehicular and pedestrian access, a greater connection exists between the Ohio Creek neighborhoods and the greater City of Norfolk.



**Projected for completion  
Spring/Summer 2023**

Today, the Ohio Creek Watershed project is an active construction site with almost all of the projects complete.

# Community-Driven Design



DESIGN INPUT



SECTION THREE MIXER

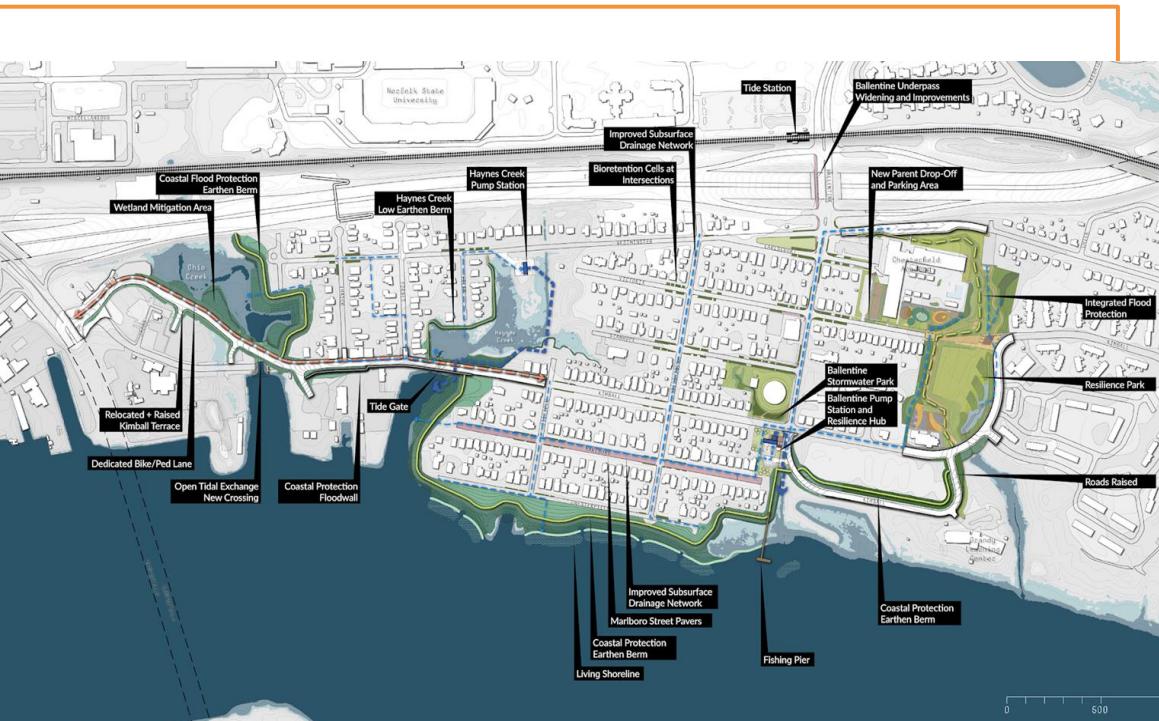


CHESTERFIELD ACADEMY  
STUDENTS

Over 40 community meetings were held including design charrettes, feedback sessions, outdoors demonstrations, section three mixers and bidders workshop.



# Ohio Creek Project Components





# Realignment of Kimbball Ter





# Development of Earth Berm Meeting Kimball Ter



# Haynes Creek Pump Station





# Redevelopment of Marlboro Avenue



# Grandy Village Stormwater Park





# Ballentine Pump Station and New Fishing Pier



# RISE: Challenge Planning 2023-24

RISE

Resilience Innovations



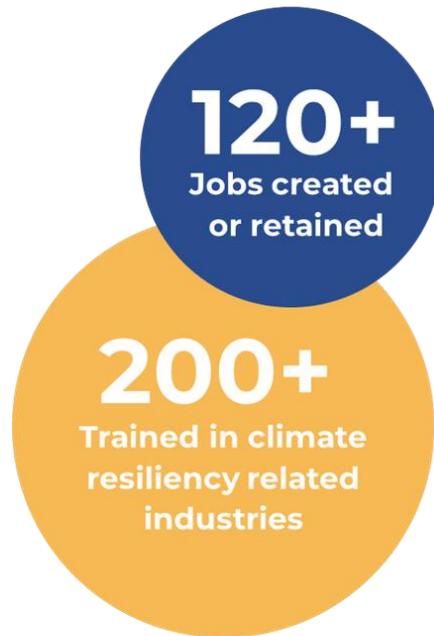
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AND COMMUNITY DEVELOPMENT  
*Partners for Better Communities*



# The RISE Model.



# RISE: By the numbers





# RISE Sustainability.

- ✓ Identify industry partners for Challenges
- ✓ Expand the RISE model across Virginia

# Rural Coastal Community Resilience Challenge



VIRGINIA  
INITIATIVE FOR  
GROWTH &  
OPPORTUNITY  
IN EACH REGION



Drainage Systems



Next-generation Buildings



Septic Systems



Nature-based Living Shorelines



Dredge Materials





# Buchanan County, VA

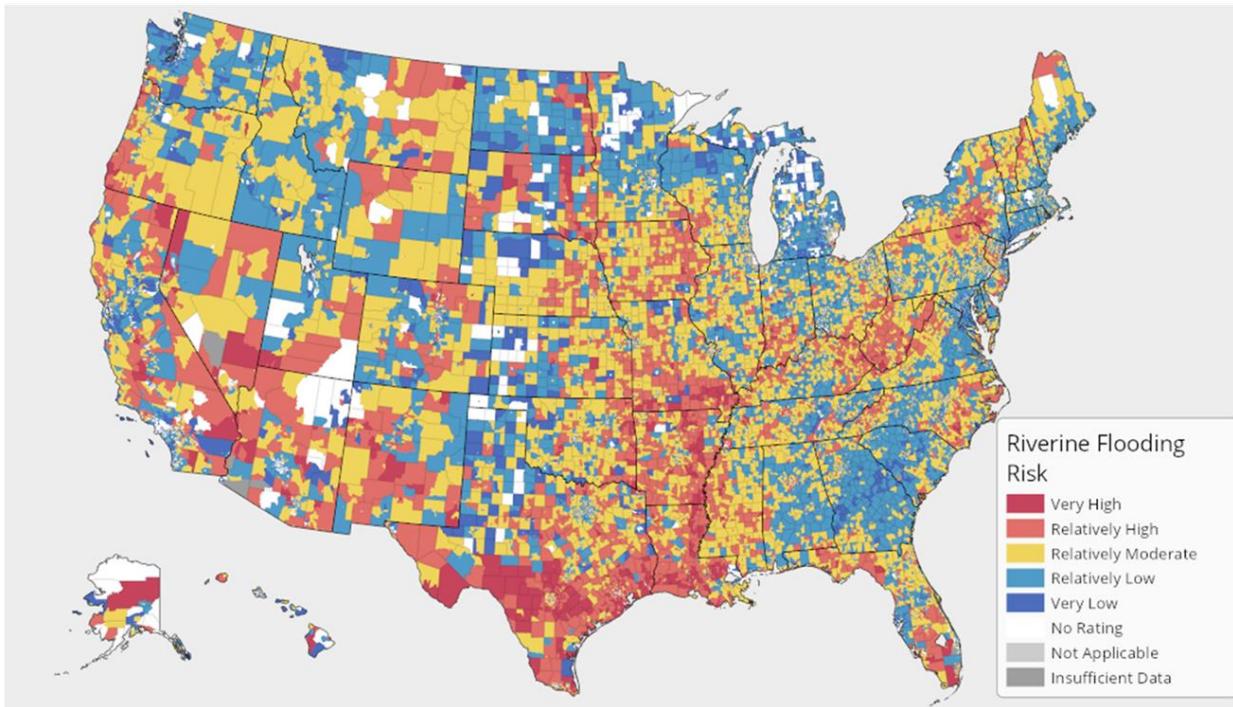
On July 12, 2022, within hours, 4-6"+ of rain caused life-threatening flash flooding that destroyed homes, roads, and bridges.

Businesses and critical infrastructure were also damaged.



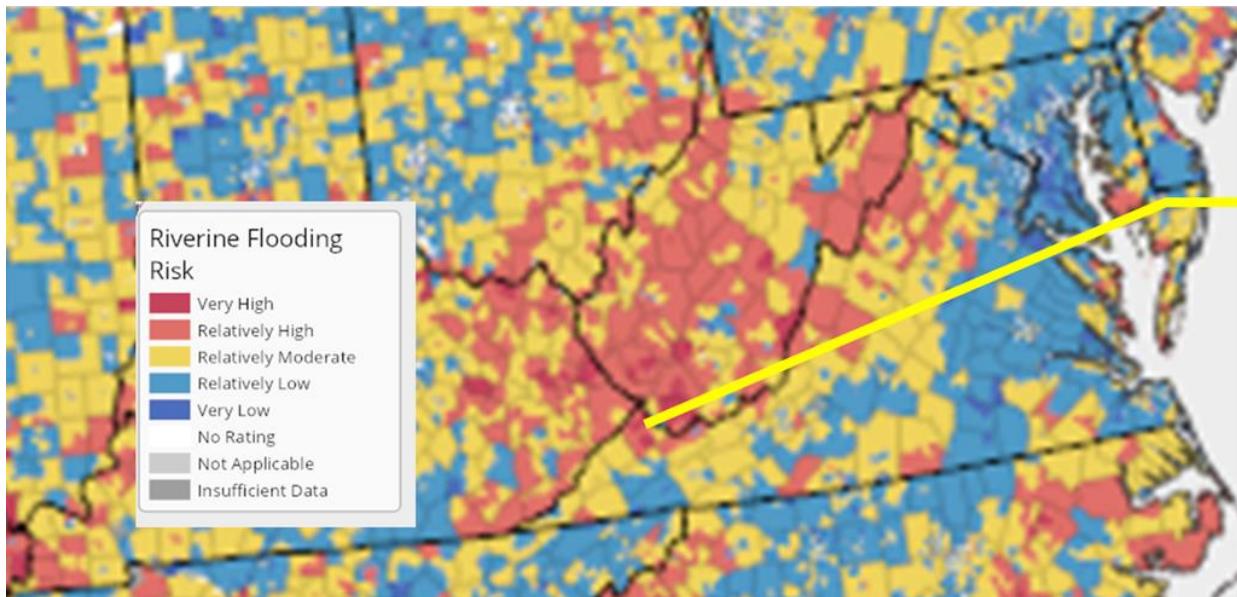


# The Unique Threats Facing Riverine & Mountain Communities





# The Unique Threats Facing Riverine & Mountain Communities



Buchanan County, Virginia



# Next Steps.

- ✓ **RISE provides proposal to DHCD** for Riverine & Mountain Community Resilience Challenge
- ✓ **DHCD and RISE collaborate** to determine participating communities
- ✓ **DHCD provides connections** to help RISE better understand metrics used to assess flood impacts (e.g., July event in Buchanan County)

# THANK YOU



VIRGINIA DEPARTMENT OF HOUSING  
AND COMMUNITY DEVELOPMENT  
*Partners for Better Communities*

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