

An aerial photograph of a river with turbulent, white-water rapids. A large, dark rock formation is visible in the center-left, with water cascading over it. The water is a mix of brown and white, indicating strong currents and foam.

Interagency Collaboration and Coordination

Resilience Coordination Working Group
February 28, 2023



Performance Management Group
L. Douglas Wilder School of Government and Public Affairs

Gina Barber, MPA

Sarah Jackson, MPA

Wheeler Wood, MS

Resilience Coordination Working Group

Working Group Charge

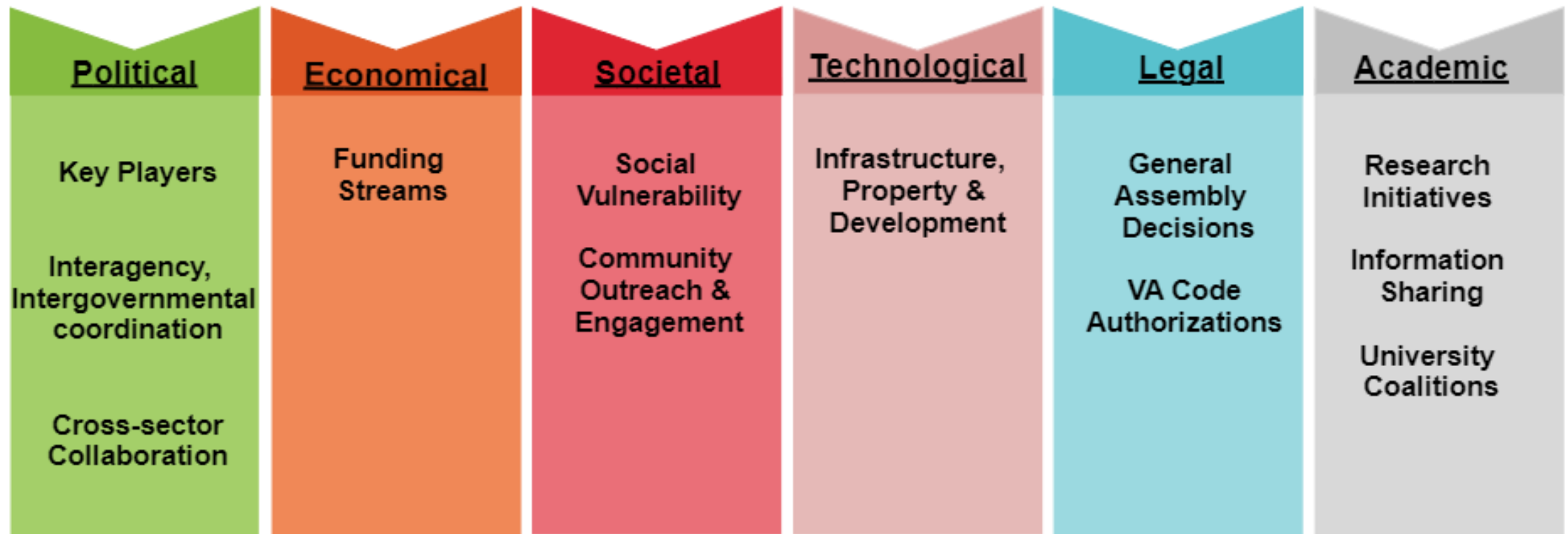
This Working Group is being established by the Chief Resilience Officer in furtherance of Governor Youngkin's goal of addressing challenges related to flooding and resilience, and in the spirit of engaging collaboratively with the General Assembly on this important issue. The Working Group will have the following purposes:

- To consider and assess strategies and policies for the Commonwealth to improve **intergovernmental and interagency coordination**; and
- To maximize the procurement of federal and private **funding opportunities** in planning for and implementing flood resilience throughout the Commonwealth.

Virginia Flood Resilience Coordination

Environmental Scan

Strengths, Weaknesses, Opportunities, Threats related to 1) Funding and 2) Coordination.





Information Sharing

Collaborations and Partnerships- Draft

Resilience Coordination Working Group

Member Representation

Government	Nonprofit
<i>Local, State</i>	<i>Public, Private</i>
25	6*
Academic	Industry, Industry Adjacent
<i>Research Institutes, Affiliates</i>	<i>Private, Public</i>
5	5*

*Nonprofit-Industry overlap: Virginia Farm Bureau, Virginia Manufacturer's Association, Virginia PACE Authority

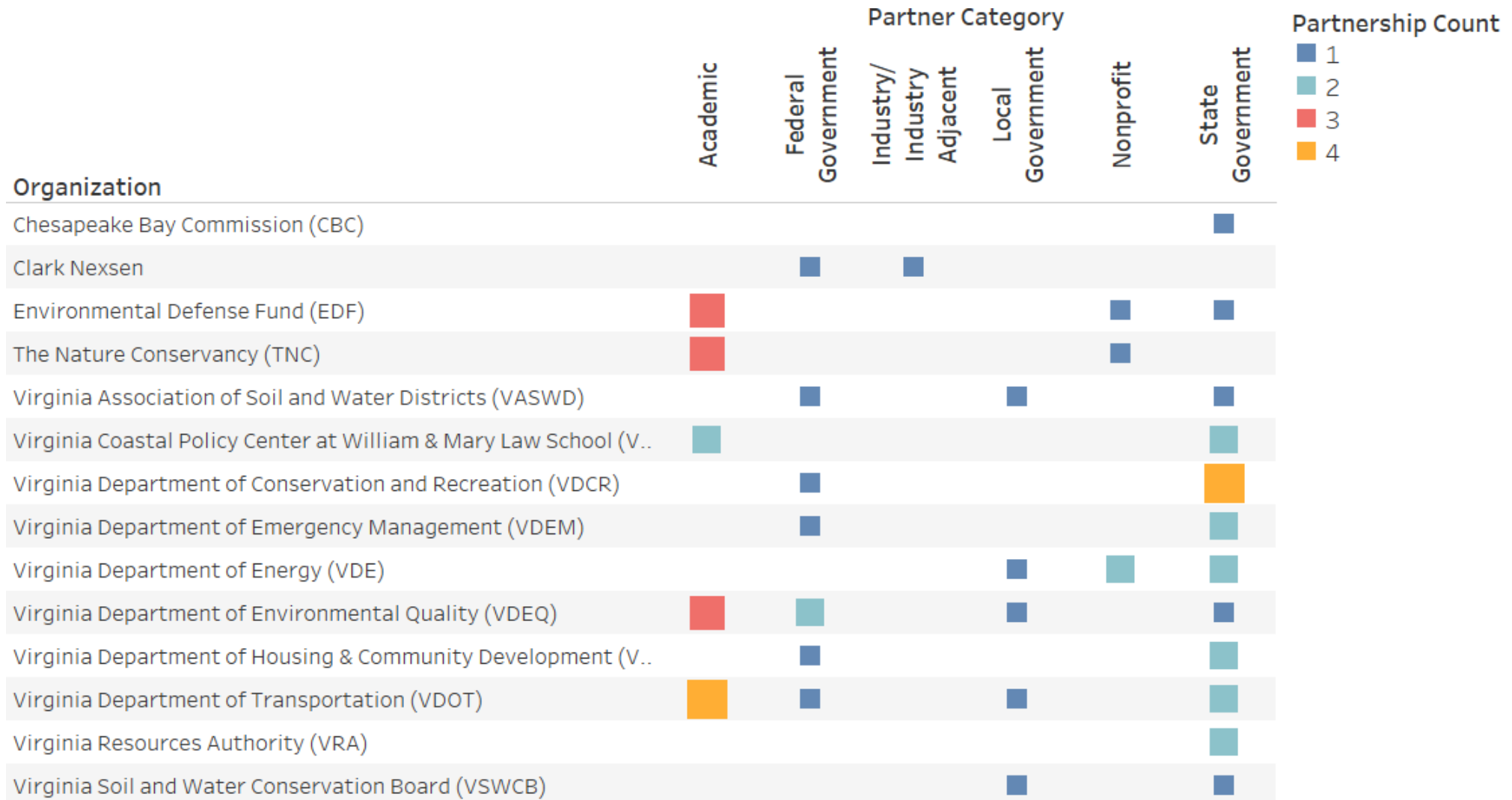
Workgroup Member Partnerships

Organization	Partner																										
	FEMA	FHWA	HUD	NOAA	NCRS	USACE	VA GA	VDCR	VDHCD	VDE	VDEM	VDEQ	VDNHR	VDOT	VRA	VSWCB	VAPDC	VASWD	ASCE	EDF	TNC	VPA	OTHERNP	ICAR-ODU	IEN-UVA	VCPC-WM	VIMS
Chesapeake Bay Commission (CBC)							■																				
Clark Nexsen				■															■								
Environmental Defense Fund (EDF)								■													■			■	■	■	
The Nature Conservancy (TNC)																				■				■	■	■	
Virginia Association of Soil and Water Districts (VASWD)					■											■	■										
Virginia Coastal Policy Center at William & Mary Law School (V..)												■		■										■	■		
Virginia Department of Conservation and Recreation (VDCR)						■			■		■		■		■												
Virginia Department of Emergency Management (VDEM)	■							■		■																	
Virginia Department of Energy (VDE)											■	■					■					■	■				
Virginia Department of Environmental Quality (VDEQ)	■			■										■			■							■	■	■	
Virginia Department of Housing & Community Development (V..)			■					■			■																
Virginia Department of Transportation (VDOT)		■						■			■						■							■	■	■	■
Virginia Resources Authority (VRA)								■		■																	
Virginia Soil and Water Conservation Board (VSWCB)								■										■									

Partner Category

- Academic
- Industry/Industry Adjacent
- Nonprofit
- Federal Government
- Local Government
- State Government

Partnerships At-A-Glance



Preliminary Findings

Strengths

- Nonprofit and Academic collaboration
- Intergovernmental and agency partnerships
- Funding available at local, state, and federal levels

Opportunities

- Collaboration with local governments
- Integration of research tools
- Industry partnerships

Discussion

For intergovernmental coordination, what are additional opportunities for collaboration with:

- Industry partners
- Academic partners
- Non-profits



VCU L. Douglas Wilder School of
Government and Public Affairs



Contact Us

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VCU

Performance Management Group
L. Douglas Wilder School of Government and Public Affairs

VDOT RESILIENCE PLAN

Resilience Coordination Working Group – Meeting #2

 Chris Swanson, Environmental Division Director

2/28/2023

Changing Environmental Conditions

Hazards and Threats

- Temperature
- Sea Level Rise
- Increased Precipitation
- Extreme Weather Events
- Rockfalls, Mudslides and Slope Failures

Impacts

- Asset deterioration and failure
- Operational, maintenance and emergency management challenges
- Need to identify cost-effective solutions
- Shifting migration patterns, habitat, etc.



<https://wtop.com/virginia/2022/07/crews-still-searching-for-17-people-after-virginia-flooding/>



<https://www.delmarvanow.com/story/news/local/maryland/2021/10/29/flooding-high-surf-forecasted-maryland-virginia-eastern-shore/6190651001/>

Virginia Planning Efforts

Commonwealth Planning

- Virginia Coastal Resilience Master Plan
- Virginia Flood Protection Master Plan
- Virginia State Hazard Mitigation Plan
- Resilience Coordination Working Group

Local Planning

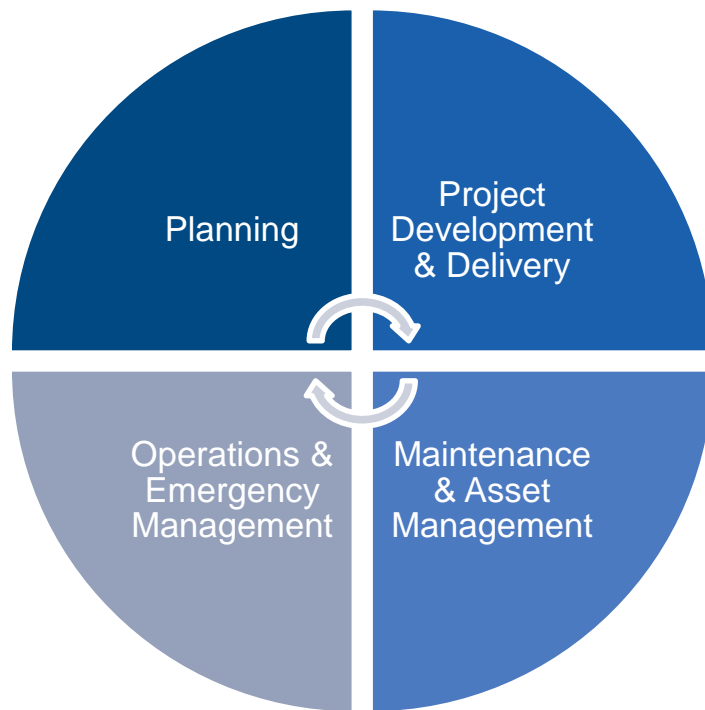
- Fairfax, Norfolk, Virginia Beach
- NVRC, HRPDC, MPPDC

➤ **VDOT plan was needed to inform and align agency, local planning efforts**



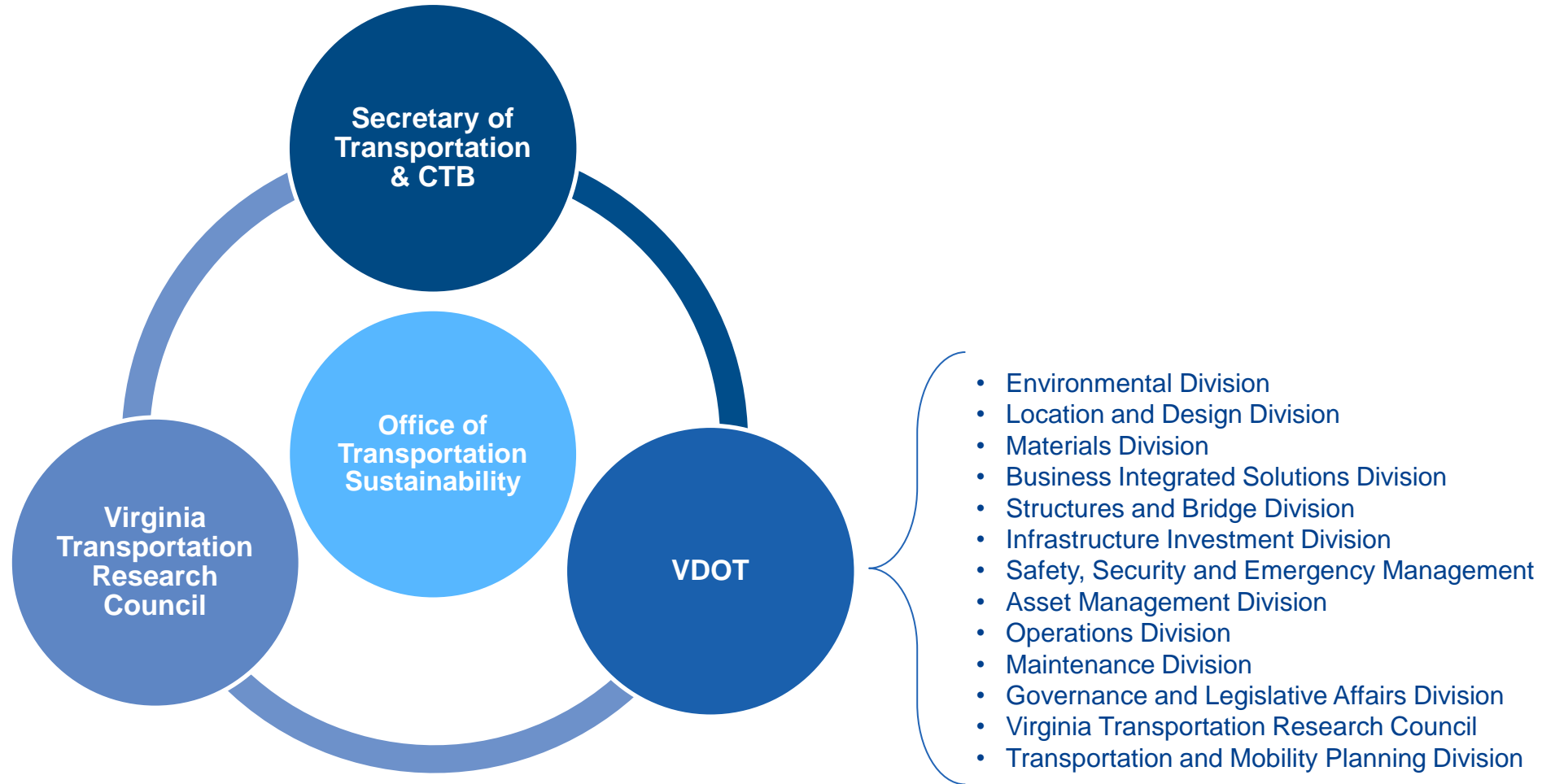
Need for Transportation Resilience

Resilience is the capability of a transportation project or strategy to anticipate, prepare for, respond to, or recover from significant multi hazard threats with minimum damage and disruption to the transportation network, while preserving and incorporating natural and built infrastructure that helps to mitigate these threats.



Incorporate resilience into existing business practices

Organizational Support for Resilience Efforts



Resilience Plan Objectives

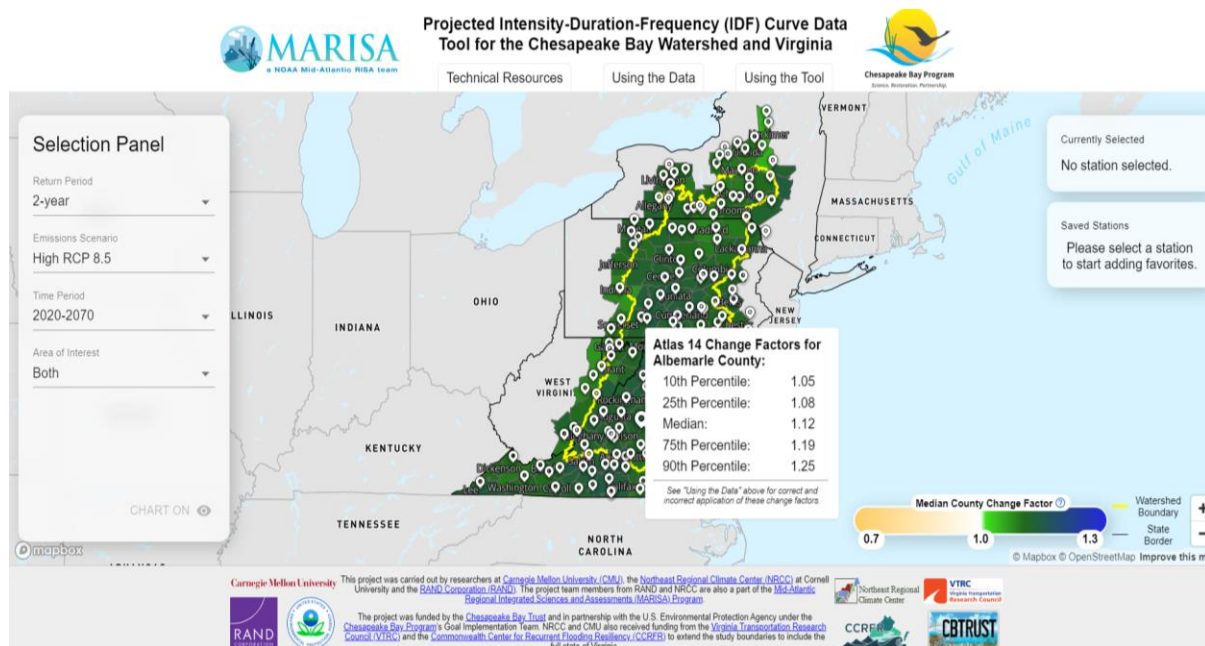
Anticipated 2-year timeframe to gather data, develop tools, and implement strategies



Resilience Plan Objectives

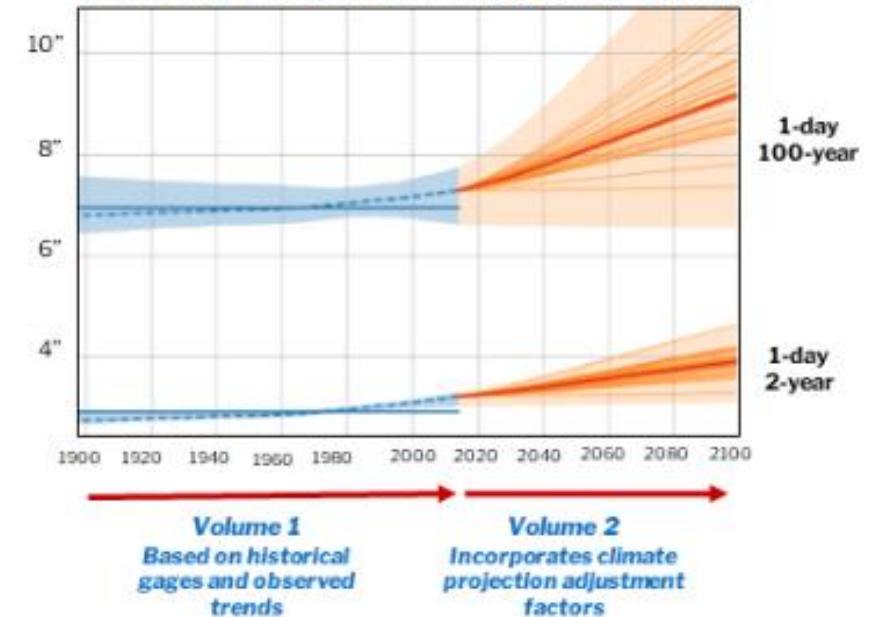
1. Promote Data Driven Decisions

- Authoritative Datasets
- Identify research and data needs and gaps
 - Resilience Research Committee



NOAA Atlas 15

National Precipitation Frequency Update



Resilience Plan Objectives

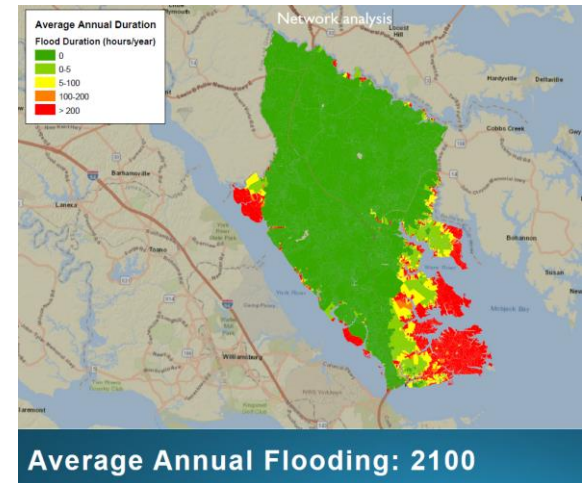
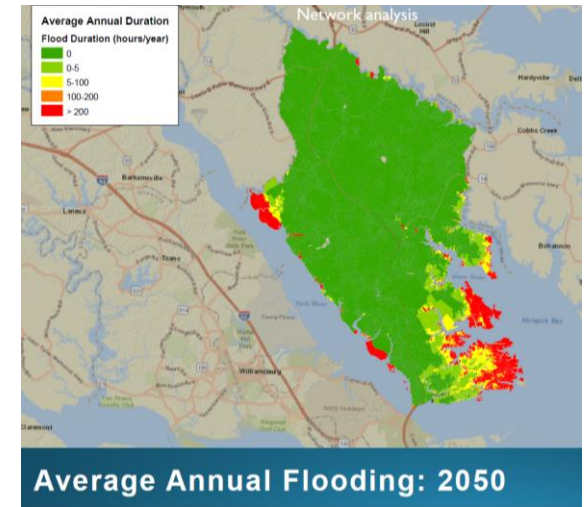
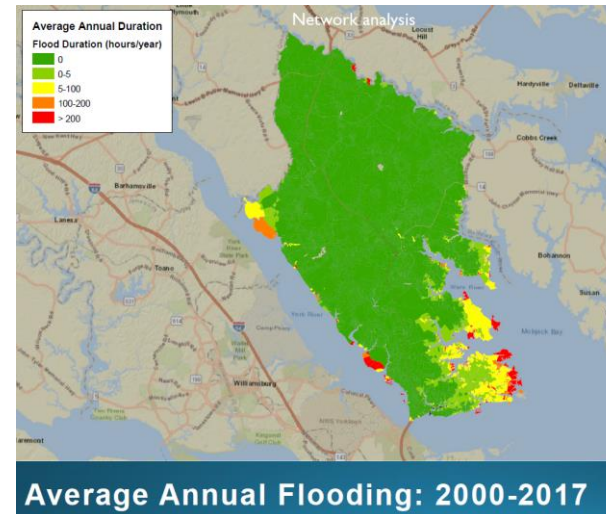
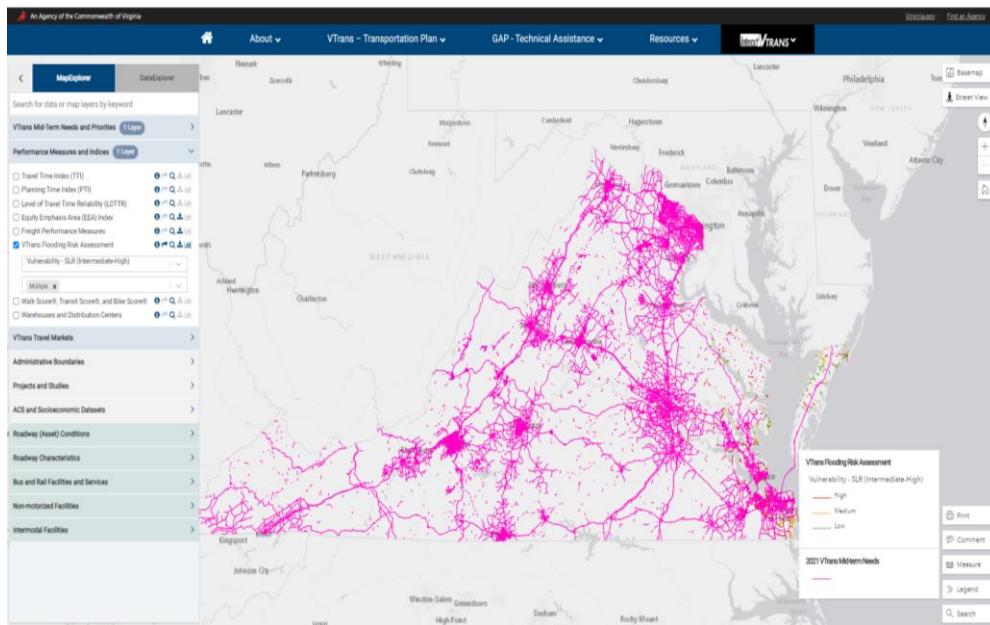
2. Engage & Coordinate with Stakeholders

- Department of Conservation and Recreation – VA Coastal Resilience Master Plan Technical Advisory Committee
- Hampton Roads Planning District Commission Working Group
- Northern Virginia Regional Commission Working Group
- Fairfax Infrastructure Advisory Group
- Transportation Research Board Working Group
- State Hazard Mitigation Plan Technical Advisory Committee and Working Group
- FHWA
- Other State Agencies
- Other MPOs and Localities
- Universities
- NGOs and Advocacy Groups
- Public

Resilience Plan Objectives

3. Identify At-Risk Infrastructure and Prioritize Needs

- Exposure + Sensitivity + Criticality
- Network Analysis



Resilience Plan Objectives

4. Finalize Resilience Measures

I. Adaptive Design Criteria

– Enhance Criteria for Identified At-Risk Infrastructure, incorporating forward looking conditions

- Structure and Bridge
 - Chapter 33: Consideration of Climate Change and Coastal Storms (Feb 2020)
- Hydraulics, VDOT Drainage Manual
- Materials, Manual of Instruction

II. Other Physical Enhancement Measures

- Flood Barriers

III. Natural and Nature-Based Solutions

- FHWA Coastal Natural and Nature Based
- FHWA Riverine Natural and Nature Based

IV. Operational, Maintenance, and Emergency Management

- Early Warning Devices (Sensors)
- Evacuation Routes
- Damage Assessments
- Floodcast (NCHRP)

V. Administrative and Policy Measures

Resilience Plan Objectives

5. Feasibility and Cost Benefit Analyses

- Feasibility Analysis
- Benefit Cost Analysis (BCA)
- Lifecycle Cost Analysis (LCCA)

Resilience Plan Objectives

6. Funding Opportunities

- BIL/IIJA (PROTECT)
- Building Infrastructure Resilient Communities (BRIC) Grants, FEMA

PROTECT Program

(Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation)

- Planning Activities, including Resilience Improvement Plan (RIP) development
 - Vulnerability assessments, technical capacity building, evacuation planning
- Resilience Improvements
 - Flood mitigation, drainage improvements, roadway realignment
- Community Resilience
 - Evacuation route improvements
- At Risk Coastal Infrastructure
 - Strengthening, stabilizing, hardening, elevating, and relocating infrastructure

Next Steps

- Continue coordination with Federal, State, and local agencies, MPOs
- Continue coordination with counterpart DOTs
- Outreach and engagement with communities, stakeholder groups
- Continue strategy development and implementation
 - Data and research
 - Identification of at risk infrastructure
 - Resilience measures
 - Planning
 - Design
 - Operations and maintenance
 - Emergency management
 - Benefit Cost and Life Cycle Analyses

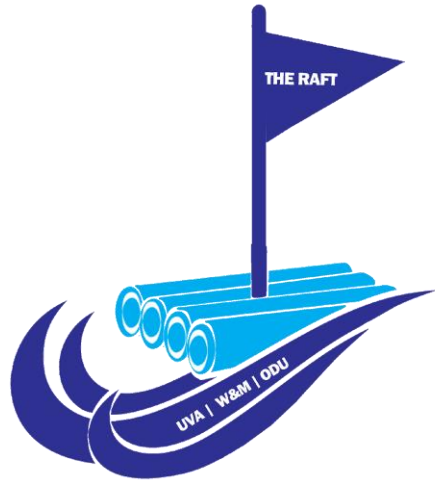
The RAFT

Resilience Adaptation Feasibility Tool

PRESENTED BY:
Elizabeth Andrews, VCPC
Jessica Whitehead, ODU



THE RAFT TEAM



Multi-disciplinary academic partnership

Core Team:

University of Virginia

Institute for Engagement & Negotiation

William & Mary Law School

Virginia Coastal Policy Center

Old Dominion University

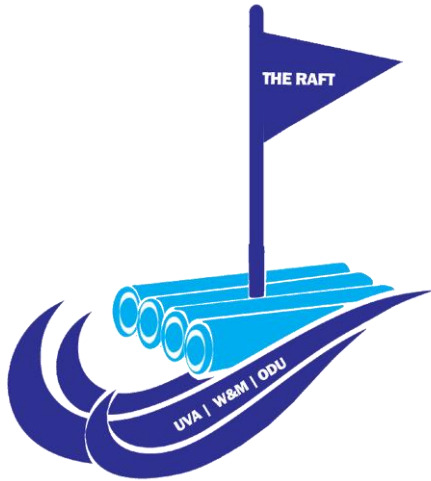
Institute for Coastal Adaptation and Resilience

THE RAFT GOAL

To help Virginia's coastal localities improve resilience to flooding and other coastal storm hazards while striving to thrive both economically and socially.



THE RAFT VALUES



- Community in the driver's seat
- Community-driven strategies
- Adapt support to each locality's needs
- No cost to community (funded by grants)

Because of the RAFT's impact, the VA Coastal Resilience Master Plan adopted Goal 4 of VA's broader coastal resilience strategy that ***"aims to have all coastal localities engaged in the RAFT process."***

THE RAFT FUNDING

Jessie Ball duPont Fund

Virginia Environmental Endowment

Virginia Coastal Zone Management Program

General staff funding:

- Commonwealth Center for Recurrent Flooding Resiliency
- UVA Institute for Engagement & Negotiation
- Virginia Sea Grant

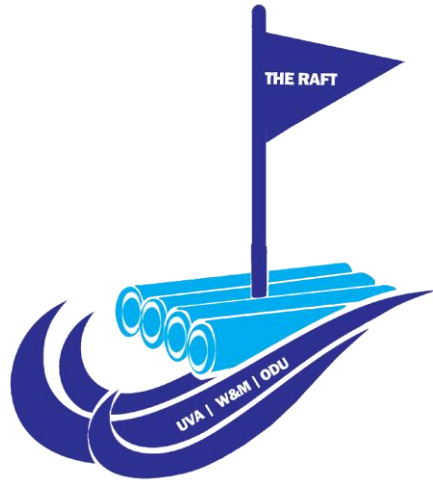


Virginia Coastal Zone
MANAGEMENT PROGRAM



Virginia
Environmental
Endowment

THE RAFT SUPPORT



- ✓ 2015-16 Research, development of The RAFT
- ✓ 2017-18 3 Pilot Localities (Town, City, County)
- ✓ 2018-19 Eastern Shore of Virginia – 7 localities
- ✓ 2019-21 Northern Neck – 8 localities
- 2022 Middle Peninsula – 6 localities
- Started: Hopewell and Petersburg
- Beyond: Inland Riverine Communities + Virginia Tribes

RESILIENCE



From: California adaptation forum
<https://www.californiaadaptationforum.org/2018caf/equity/>

The Resilience Cycle



Adapted from: NOAA Coastal Community Resilience Indicators and Rating Systems, 2015

THE RAFT PROCESS

3 Step Process

1. ASSESSMENT

- The RAFT Resilience Scorecard
- Interviews & Focus Groups with Community Service Providers

2. SETTING PRIORITIES

- Resilience Action Workshop
- 1-Yr Resilience Action Checklists
- Locality Implementation Teams

3. IMPLEMENTATION

- Ongoing Support & Assistance



STEP 1: THE RAFT SCORECARD

1. **POLICY, LEADERSHIP, AND COLLABORATION:** policies, coordination, and access to data
2. **RISK ASSESSMENT AND EMERGENCY MANAGEMENT:** risk assessments, vulnerable populations, and plans for disaster preparedness
3. **INFRASTRUCTURE RESILIENCE:** stormwater, critical infrastructure, and natural and nature-based features
4. **PLANNING FOR RESILIENCE:** comprehensive plan, zoning ordinance, building and development incentives, and green infrastructure
5. **COMMUNITY ENGAGEMENT, HEALTH, AND WELL BEING:** residents, social equity, health and wellness

WHAT DOES THE SCORE MEAN?

Low Resilience: Less than 50

There are plenty of opportunities for improvement. The locality should decide whether it will be more beneficial to achieve the least difficult improvements first, or to tackle more challenging problems. The key is to decide which of these approaches makes the most sense, as the locality develops their Resilience Action Checklist.

Moderate Resilience: 50-74

The locality is actively involved in coastal resilience planning and has achieved some success. There are still opportunities for strengthening resilience. The Resilience Action Checklist should focus on weak categories and anticipate moderate to difficult improvements.

High Resilience: 75 or More

Locality is well prepared! There may still be room for resilience and the Resilience Action Check list may focus on ways to improve resilience and further engage residents. Examples of locality policies, plans, and activities may assist other localities in the region and beyond.

STEP 2: SETTING PRIORITIES

- **Resilience Opportunity List, created from:**
 - Scorecard gaps
 - Hazard Mitigation Plan
 - Regional Social Equity Focus Groups and Interviews (50+ organizations represented)
- **Community Workshop**
 - Develops 5 Priority One-Year Actions – the "Resilience Action Checklist"
 - The Resilience Action Checklist is ground-truthed, refined, and implemented over the next year



STEP 3: IMPLEMENTATION – WITH ASSISTANCE FROM THE RAFT TEAM

- **Monthly support meetings** for Implementation Team with The RAFT Core Team
- **Technical Assistance over 1 year** in implementing Resilience Action Checklist, e.g.,:
 - Development of **communication products**
 - **Law and policy** analysis
 - Development of **model ordinances and Comprehensive Plan language** incorporating resilience
 - **Mapping:** GIS mapping, asset mapping, vulnerable infrastructure mapping
 - Connection to needed **experts** (e.g., engineers or planners; state agencies)
 - Facilitation, presentations, **community engagement**, surveys
 - Development of **small business emergency preparation programs**

THE RAFT'S UNIQUE VALUE

- Generates **community-wide discussion and common understanding about recurrent flooding and community resilience**
- Builds a strong **network of support and access and resources** with state agencies, university expertise, NGOs, and service providers
- **Transcends silos of resilience**, locally and regionally, bringing together groups that address different aspects of resilience but have never worked together
- Offers the only **structured long-term process for community-based and community-driven resilience planning** in Virginia
- Provides **technical assistance and resources** such as studies, planning documents, mapping, tools for business planning, surveys, facilitation, and more
- Supports community implementation teams with facilitated meetings for a year of implementation – a total of **18 months+ of engagement with each community**

From that first meeting we developed our action checklist. First was our comprehensive plan. The next was to work on a resilient waterfront, and then to educate and do outreach to the community. **[The RAFT] has been such a valuable thing for our community.**

Council Member, Town of Onancock

RAFT opened our eyes to a predetermined future. I **recommend the RAFT** and they are to be commended for a job well done. We would advise any town committee or council to listen to their predications and potential remedies.

*Town of Onancock
Waterfront Committee*

Making a Difference on the Ground

After reading the RAFT Scorecard for our community, the Saxis team immediately **knew where it could improve to prepare for [hurricane]** Florence – getting a count of who was staying, who was evacuating, providing transport to shelters, creating a master communication list, etc.

Council Member, Town of Saxis

The RAFT really **turned the tide in Warsaw.** During a pandemic, when the world shut down, Warsaw continued to grow.

*Town of Warsaw
Chamber of Commerce*

Building Connections

The RAFT has **eliminated the feeling of being siloed in the trends and issues affecting our community**, thus highlighting we are a team and “one community” working together to address the overall needs of our citizens.

*Director, Richmond County
Department of Social Services*

One of the fundamental benefits of RAFT is its **ability to bring together public and private entities** to ensure the needs of the communities are highlighted and addressed.

*Pastor, First Baptist
Church of Tappahannock*

A Community Approach to Resilience

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