

# Coastal Resilience Technical Advisory Committee

Quarterly Meeting

December 15, 2023

9:00am – 12:00pm

All Virtual Meeting – Zoom

[https://vcu.zoom.us/meeting/register/tZ0pfu2orzsiGNHBGV9lt\\_FmaXOuqA\\_vDBWD#/  
/](https://vcu.zoom.us/meeting/register/tZ0pfu2orzsiGNHBGV9lt_FmaXOuqA_vDBWD#/)

# Meeting Agenda

- 1) Call to Order and Roll Call
- 2) Adoption of the Agenda
- 3) Adoption of Meeting Minutes from September 19, 2023
- 4) Reports from DCR
  - a. DCR Updates
  - b. Coastal Resilience Master Plan, Phase II Update
- 5) Reports from TAC Subcommittees and Consideration of Subcommittee Recommendations
  - a. Research, Data, and Innovation Subcommittee
  - b. Project Prioritization Subcommittee
  - c. Funding Subcommittee
  - d. Outreach and Coordination Subcommittee
- 6) Old Business
- 7) New Business
  - a. Phase II Outreach & Engagement Strategy
  - b. TAC Member Discussion
- 8) Public Comment

# DCR Updates

Resilience Coordination Working Group

Community Flood Preparedness Fund & Resilience Virginia Revolving Fund

Resilience Planning and Consulting RFP

Office of Resilience Planning Staffing

# Resilience Coordination Working Group

- Virginia faces challenges related to coordinating state-level resilience planning, programs, and funding efforts, which are dispersed across multiple agencies and secretariats.
  - Additionally, our current structure hampers our ability to capture federal dollars and does not provide localities with the support they need to address challenges at a local level.
- The Administration convened a Resilience Coordination Working Group (RCWG), comprised of a broad group of 39 stakeholders, to develop recommendations to address these challenges.

**Resilience Coordination Working Group Members**

Central Shenandoah PDC (CSPDC)	Home Builders Association of Virginia (HBAV)	The Nature Conservancy (TNC)	Virginia Department of Emergency Management (VDEM)	Virginia Farm Bureau (VFB)
Chesapeake Bay Commission (CBC)	Middle Peninsula PDC (MPPDC)	University of Virginia - IEN (UVA)	Virginia Department of Environmental Quality (DEQ)	Virginia Institute of Marine Science (VIMS)
Chesapeake Bay Foundation (CBF)	Mount Rogers PDC (MRPDC)	Virginia Marine Resources Commission (VMRC)	Virginia Department of Housing and Community Development (DHCD)	Virginia Manufacturer's Association (VMA)
City of Alexandria	Old Dominion University - ICAR/CCRFR (ODU)	Virginia Agribusiness Council (VAC)	Virginia Department of the Treasury (Treasury)	Virginia PACE Authority (VPA)
Clark Nexsen	Port of Virginia	Virginia Association of Soil and Water Districts (VASWCD)	Virginia Department of Transportation (VDOT)	Virginia Resources Authority (VRA)
Cumberland Plateau PDC (CPPDC)	Secretary of Natural and Historic Resources (SNHR)	Virginia Association of Counties	Virginia Department of Energy (Energy)	Virginia Tech - CCS (VT)
Environmental Defense Foundation (EDF)	Secretary of Veterans and Defense Affairs (VADA)	Virginia Chamber of Commerce (VACHamber)	Virginia Department of Wildlife Resources (DWR)	Citizen Member
Hampton Roads PDC (HRPDC)	Soil and Water Conservation Board (SWCB)	Virginia Department of Conservation and Recreation (DCR)	Virginia Economic Development Partnership (VEDP)	

# Resilience Coordination Working Group

- The group adopted 23 recommendations with no opposition. Key recommendations are:
  - Shifting the Chief Resilience Officer (CRO) to report to the Governor in a non-cabinet role and establishing an office to support.
  - Adopting a “hub and spoke” model for resilience (as defined in § 10.1-603.28), where the CRO serves as the hub, facilitating coordination and communication between agencies (the “spokes”), who would retain their existing resilience-related responsibilities.
  - Establishing an interagency working group, headed by the CRO, to support this coordination.
  - Tasking the CRO with maximizing the availability and use of federal, state, and private funding for resilience efforts (including serving as the non-federal sponsor for USACE projects in some circumstances).
  - Supporting localities by tasking the CRO with providing knowledge-based support to local governments seeking to address resilience challenges within their communities.
  - Establish a new group (or re-scope CR TAC) with appropriate statewide representation to support the development and implementation of the VFPM
  - Adopting a statutory framework to ensure oversight and transparency for the CFPF and RVRF.

# Community Flood Preparedness Fund Round 4

36 applicants submitted a total of 66 CFPF applications (1-6 applications/community)

Total requested amount ~\$76M to support \$147M of Resilience Actions

	Applications Submitted	~Amount Requested	~Total Costs	~% of Funds Requested by Communities Qualifying as Low Income
Capacity Building and Planning	18	\$6,600,000	\$8,000,000	58%
Studies	18	\$9,700,000	\$11,100,000	94%
Project	30	\$59,800,000	\$127,900,000	54%
<b>Total</b>	<b>66</b>	<b>\$76,100,000</b>	<b>\$147,000,000</b>	<b>60%</b>

# Resilience Planning and Consulting RFP

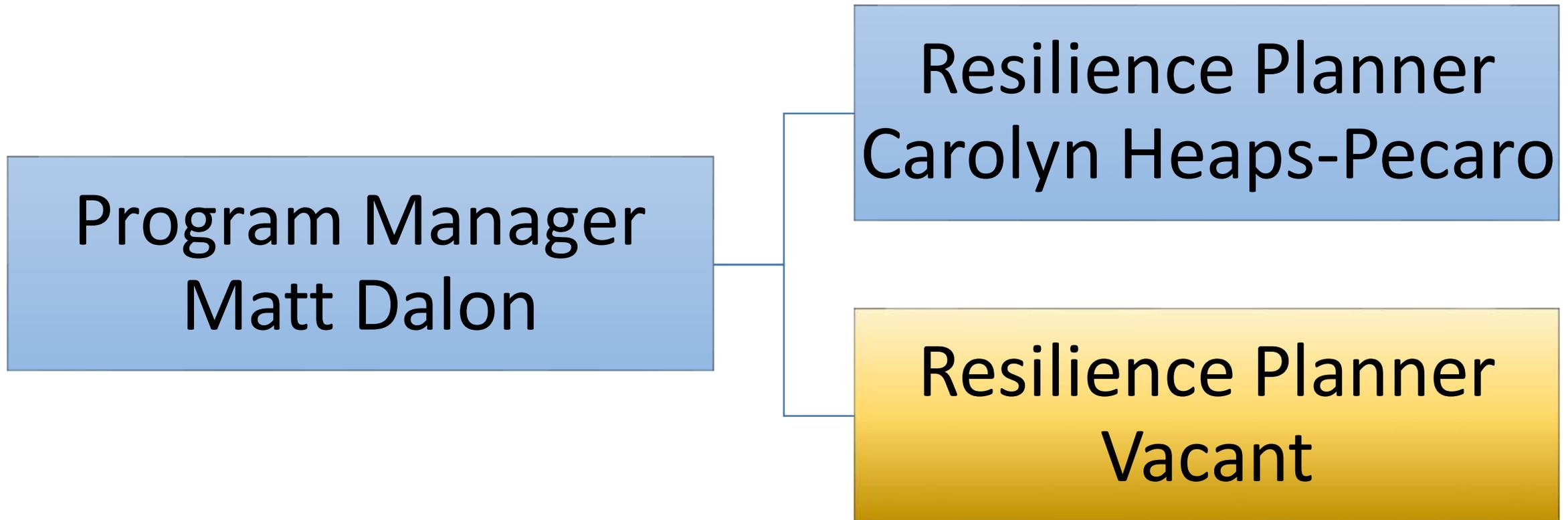
## RFPs to support Flood Resilience Planning

- Schedule
  - ~~Released: Jul 2023~~
  - ~~Proposals Due: Sept 2023~~
  - ~~Interviews: Dec 2023~~
  - Anticipated Award: Jan 2024
  - Task Order NTP: Feb/Mar 2024

### Ongoing Dewberry Contracts:

- Project and funding web app development for coastal resilience web explorer
- Pluvial modeling in coastal region
- Flood hazards impact analysis
- Coastal resilience web explorer updates

# Office of Resilience Planning Staffing



# Virginia Coastal Resilience Master Plan, Phase II Update

Phase II Overview

Pluvial Modeling Update

Coastal Resilience Web Explorer, User Portal Update

# CRMP Phase II – December 2024

Phase 2 Code Requirements [2022 GA HB516/SB551 now §[10.1-658, 659](#)]

- SACAP in coordination with DCR, shall update the Virginia Coastal Resilience Master Plan no later than December 31, 2024 (every 5 years thereafter)
- CRMP shall be a place-specific plan for mitigating severe and repetitive flooding and shall [adhere to the Framework Principles]
- Phase 2 will incorporate:
  - all major flood hazards, including precipitation-driven flooding
  - a comprehensive risk assessment of critical human and natural infrastructure
  - a list of all projects considered and an update of the status of all projects previously implemented
- Phase 2 will implement the Community Outreach and Engagement Plan

# CRMP Phase II – December 2024

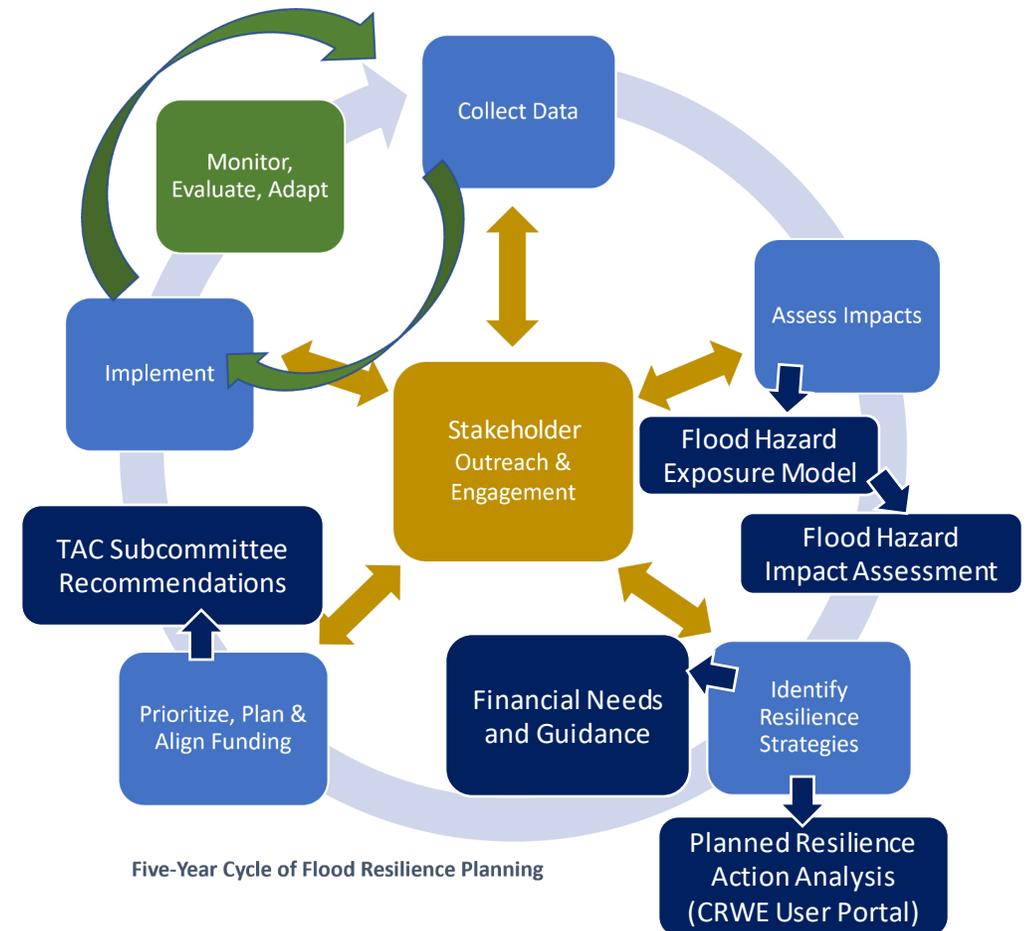
This planning process will result in two major deliverables:

- 1) an updated Coastal Resilience Web Explorer
- 2) a PDF Document Plan

**The key components of these two deliverables are:**

- 1) Flood Hazard Exposure Model
- 2) Flood Hazard Impact Assessment
- 3) Planned Resilience Actions
- 4) Financial Needs for Flood Resilience
- 5) TAC Subcommittee Recommendations

Outreach and engagement will be utilized throughout the plan's development to collect feedback on the content and direction of these key components.



# CRMP Phase II – December 2024

## **Primary Audiences/ End Users:**

- Planning District Commissions
- Localities
- Tribal Governments
- State Agencies/Programs

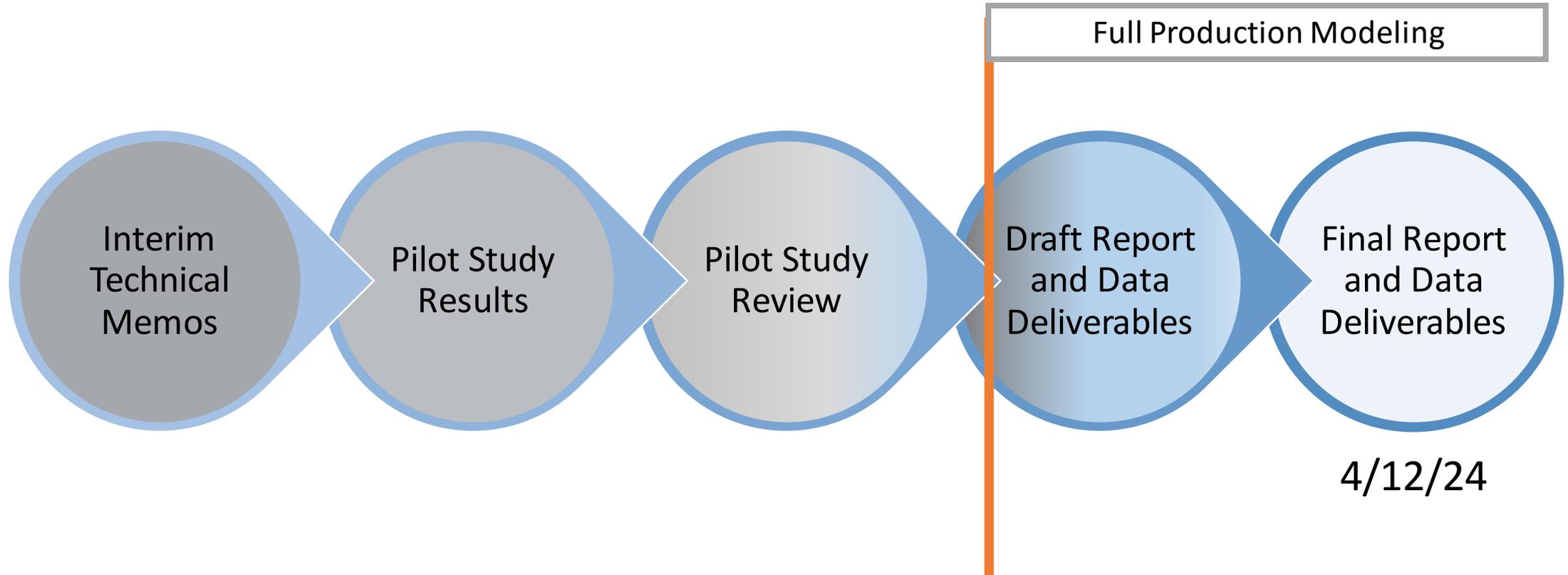
## **How they can use the plan:**

- Build upon models and findings to conduct more specific assessments of asset and programmatic vulnerability.
- Incorporate flood hazard exposure models and impacts into other long-range plans.
- Identify opportunities for collaboration with other actors toward resilience.
- Leverage findings to aid in developing grant applications.
- Justify budgetary requests.

# CRMP Phase II - Plan Development Timeline

Jul 23	Aug 23	Sep 23	Oct 23	Nov 23	Dec 23	Jan 24	Feb 24	Mar 24	Apr 24	May 24	Jun 24	Jul 24	Aug 24	Sep 24	Oct 24	Nov 24	Dec 24
<i>Meetings</i>																	
	Sub	TAC		Sub	TAC		Sub	TAC		Sub	TAC		Sub	TAC		Sub	TAC
<i>Schedule</i>																	
Develop Flood Hazard Exposure Model Research, Data, and Innovation						Data Display (CRWE Update) Research, Data, and Innovation											
		Data Collection Project Prioritization				Flood Hazard Risk Assessment Project Prioritization											
Project and Initiative Info Collection Project Prioritization						Analyze Planned Resilience Actions Project Prioritization, Funding											
				Quantify Financial Need for Flood Resilience Funding													
Ongoing Stakeholder Outreach and Engagement Outreach and Coordination																	
Develop TAC Subcommittee Recommendations All Subcommittees																	

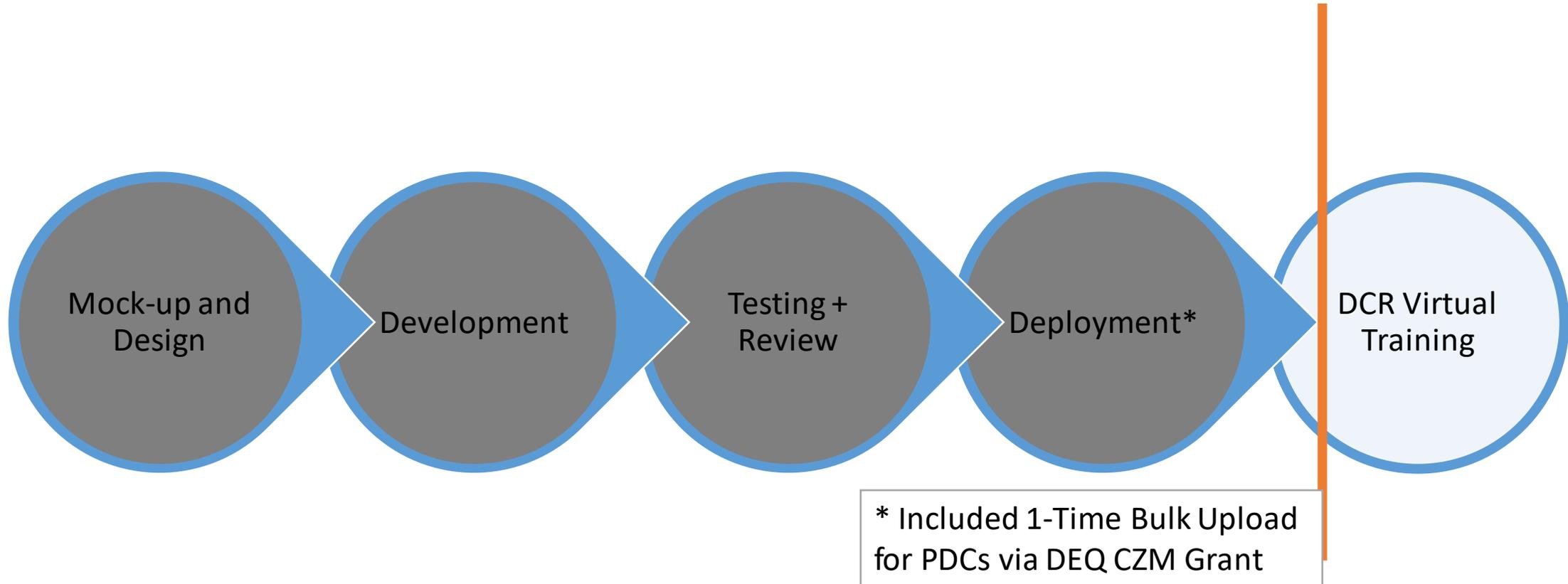
# Major Flood Hazards Pluvial Modeling Update



# Major Flood Hazards Pluvial Modeling Update

- Full Production Modeling Update
  - 0.5-ft depth threshold for display and impact analysis
  - **Mosaic of best available land cover land use input data**
    - Chesapeake Conservancy Land Cover Data 2017/18 (1-m)
    - Virginia Statewide Land Cover Dataset 2013/24 (1-m)
    - National Land Cover Dataset 2019 (30-m)
  - **Precipitation input values using a fixed interval approach.**
    - Planning scenarios will utilize best applicable interval values.

# Coastal Resilience Web Explorer (CRWE) User Portal Update



## Virginia Coastal Resilience Web Explorer User Portal

### Access Instructions

Those wanting access to the Coastal Resilience Web Explorer **must first submit this form** (PDF).

Once the form has been completed, email or mail the form and any supporting attachments to:

Resilience.Explorer@dcr.virginia.gov  
Department of Conservation and Recreation  
600 E. Main Street, 24th Floor  
Richmond, Virginia 23219

# Projects and Initiatives Summary

## Projects and Initiatives Summary

New Project

New Initiative

Copy Existing to Make a New Project/Initiative

Name	Category	Phase	Owner	Submitter	Submission Status	Submission Date
18th Street Drainage Improvements	Project	Construction/Implementation	Chesapeake	Crystal Bloom	Approved	12/07/2021
1. Crow's Nest Peninsula and Estuary Conservation	Project	Proposed	Northern Virginia Conservation Trust	Rentz Hilyer	Approved	12/07/2021
2019 FMA	Project	Programmed	Gloucester County	Anne Payne	Approved	12/07/2021
5th Street Improvements	Project	Proposed	Hampton	Scott Smith	Approved	12/07/2021
Aberdeen Gardens Drainage Improvements	Project	Proposed	Hampton	Scott Smith	Approved	12/07/2021

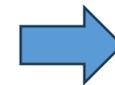
Click to select or double click to select and open the project or initiative details.

View All

Reset Filters

# Projects and Initiatives Details

ID	-	Owner	-	Submitter Email	-
Name	-	Location CID	-	Submission Status	-
Location	-	Submitter	-	Submission Date	-



Top of Page

General Information

Optional Information

Map

Contact

## General Information \*

Name *	Input Text
Location *	Select one or more
Owner *	Select one
Phase *	Select one
Related Initiative *	Select one
Description *	Input Text

# Projects and Initiatives Details

Map \*

**Legend**

**Layers**

- All Initiatives
- All Projects
- Locations
- Selected Project

**Project Phase**

- Proposed
- Programmed
- Site Assessment/Prelim Design
- Final Design/Permitting
- Construction/Implementation
- Complete

**Graduated Flood Hazards**

Hide 2020 2060 2100

© Mapbox © OpenStreetMap Improve this map

New or copied projects must be saved before adding the project polygon

Zoom to Project

Location: Select one or more

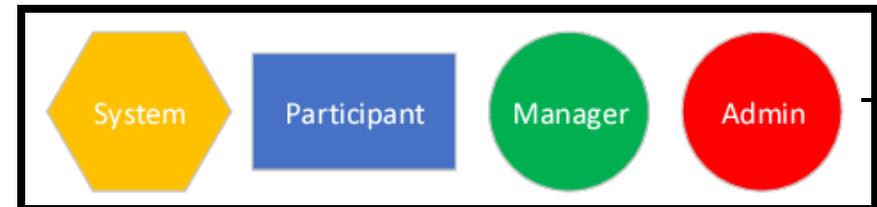
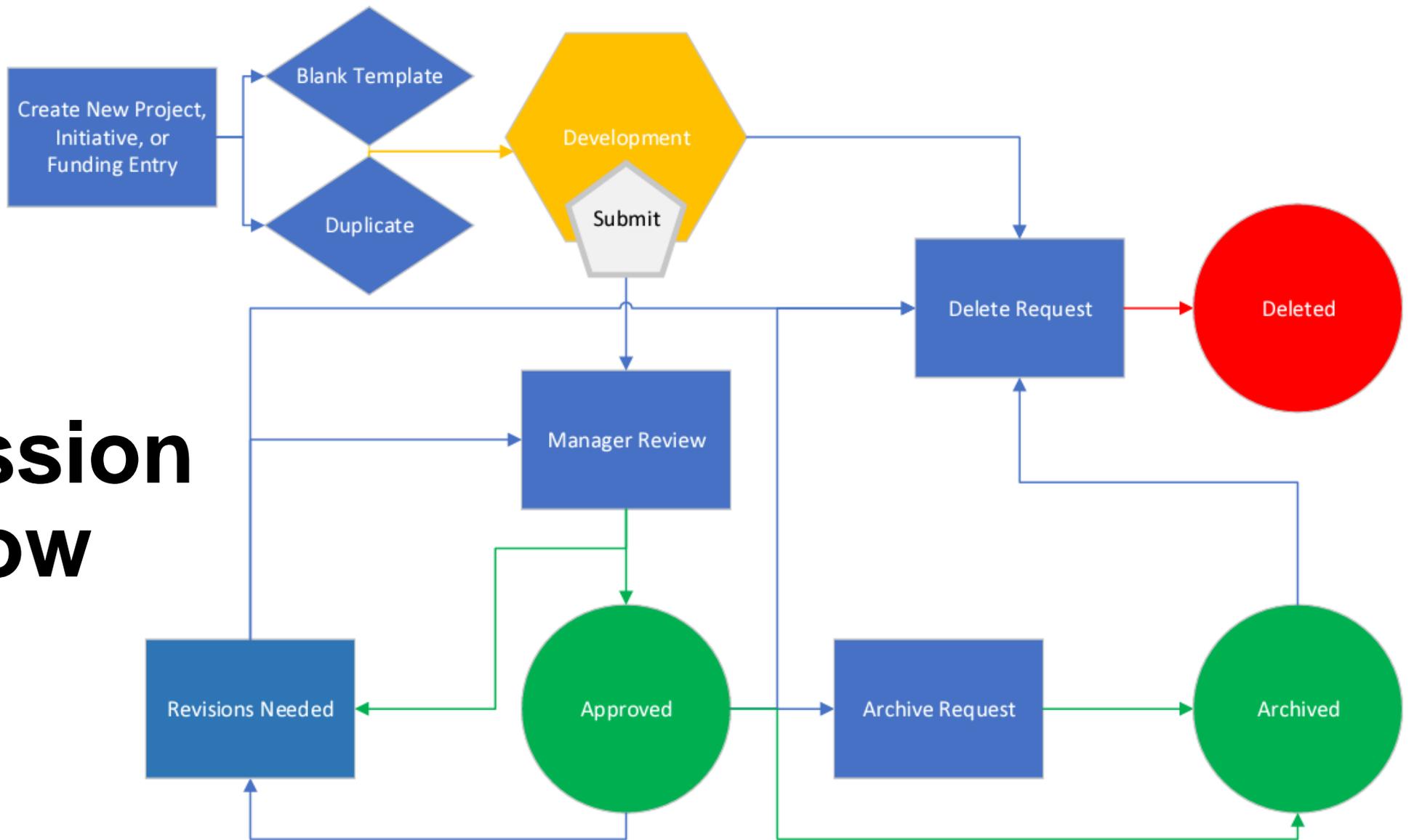
Upload a Zipped Polygon Shapefile

Browse... No file selected Upload

**There are three mapping options:**

1. draw/edit on the map
2. select a predefined location
3. upload a zipped polygon shapefile.

# Submission Workflow



# “Approved” > Coastal Resilience Web Explorer

**VIRGINIA COASTAL RESILIENCE WEB EXPLORER** Ver 1.0

Introduction Hazards Impacts Community Context **Projects and Initiatives** Funding Opportunities

The collected projects represented here provide an initial sample of the substantial resilience project needs within the Commonwealth. Projects were collected through a survey call issued to localities and PDCs. Future CRMP efforts will seek to extend the coverage of this database while moving to a more comprehensive capture of needs across the Commonwealth.

**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
  - 2020
  - 2040
  - 2060**
  - 2080
- Community Resource Impact Areas
- Critical Sector Impact Areas
- Natural Infrastructure Impact Areas
- Coastal Hazard and Social Vulnerability

**Project List:**

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 checked="" 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

**Map:** Shows the Appomattox River region with project locations highlighted in green and blue. Labels include Walthall, Hopewell, Highland Park, Kenwood, Jefferson Park, Fort Gregg-Adams, Prince George, Heights, Kennebrew, Matoaca, Ettrick, Colonial Heights, Oldtown Creek, Swift Creek Lake, Lake Chesdin, and Beechwood Manor.

**Project Details:**

**Name:** Appomattox River Trail (blueway and greenway)  
 The Appomattox River Trail is a 25 mile blueway and greenway under development in the Tri Cities region. This project will conserve riverfront land, improve the quality of life of the region, provide safe alternative transportation and increase the economic development of the region. This recreation and transportation facility will also help protect sensitive riverfront lands to address flooding and SLR.

**Location:** Charles City County, Chesterfield County, Colonial Heights, Dinwiddie County, Hopewell, Petersburg, Prince George County

**Type:** Hybrid - Other

**Coastal Hazards Addressed:** Riverine Flooding, Shoreline Erosion, Storm Surge Flooding, Stormwater Flooding, Tidal Flooding

**Phase:** Site Assessment/Prelim Design

**Owner:** Friends of the Lower Appomattox River

**Climate Standards:** CRMP Scenarios, Rainfall Scenarios

**Implementation Cost:** \$25,000,000

# Web Explorer Downloads



Introduction

Hazards

Impacts

Community Context

**Projects and Initiatives**

Funding Opportunities



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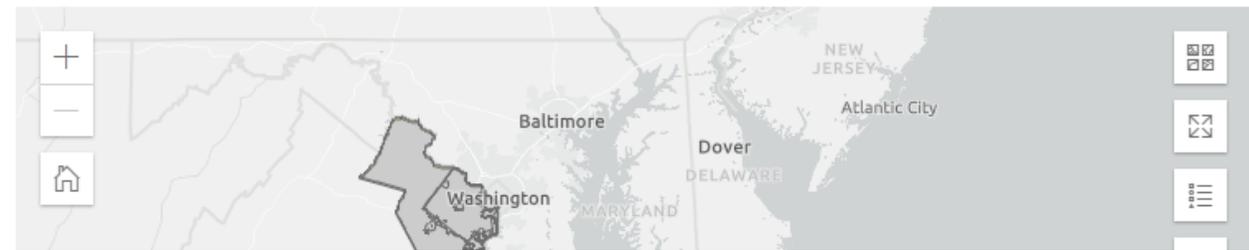
## Select Area of Interest:

Commonwealth

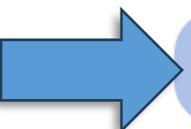
## Search:

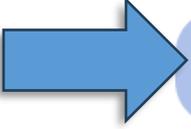
Projects and Initiatives (Features: 659, Selected: 0) ...

<input checked="" type="checkbox"/>	Name	
<input type="checkbox"/>	18th Street Drainage Improvements	
<input type="checkbox"/>	1. Crew's Next Peninsula and Estuary Construction	



**SCROLL TO THE BOTTOM OF THE PROJECTS AND INITIATIVES PAGE TO DOWNLOAD THE DATA**

 Download Tabular Projects Data

 Download Spatial Projects Data

Continue to Funding Coastal Resilience >

# User Portal Downloads

VIRGINIA COASTAL RESILIENCE WEB EXPLORER / ver 1.0

FAQ Sign Out

Projects and Initiatives Funding Opportunities My Profile Admin

Projects and Initiatives

Projects and Initiatives Summary

New Project New Initiative Copy Existing to Make a New Project/Initiative

Name	Category	Phase	Owner	Submitter	Submission Status	Submission Date
Adjustment to Floodplain Ordinance/Restricting Development	Initiative	N/A	Ashland	Sarah Stewart	Manager Review	09/29/2023
Ancell St. & Commonwealth Project	Project	Proposed	Alexandria	Rebecca Murphy	Manager Review	09/29/2023
Application of Floodplain Ordinance to potentially developed Local Floodplains from Project ID #28	Initiative	N/A	Ashland	Sarah Stewart	Manager Review	09/29/2023
Bellefonte Dr. Project	Project	Proposed	Alexandria	Rebecca Murphy	Manager Review	09/29/2023
Belle Isle Shoreline Restoration	Project	Proposed	Richmond	Sarah Stewart	Manager Review	09/29/2023

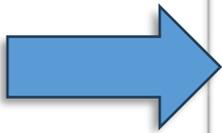
Click to select or double click to select and open the project or initiative details

Page 1 of 29 | Go to page: 1 Show 5

View All Reset Filters

Reports

Projects and Initiatives List Submission Status Report



# Projects and Initiatives Inventory Update

- **Bulk PDC Upload**

- 8 coastal PDCs received funding via DEQ Coastal Zone Management Program to develop/update resilience projects and initiative for a state database.
- Received 143 submissions via bulk upload with Coastal Zone Management.
- Reviews and approvals are complete, but more work is needed...

- **Other entities can add resilience activities**

- DCR worked with VDEM to get completed hazard mitigation projects into the Web Explorer.
- Other state agency projects

*PDC Projects and Initiatives Upload Summary*

<u>PDC</u>	<u>Projects*</u>	<u>Initiatives*</u>	<u>Total</u>
NVRC	59	10	69
PlanRVA	22	24	46
Crater	13	0	13
GWRC	5	4	9
NNPDC	4	0	4
MPPDC	1	1	2
A-NPDC	0	0	0
HRPDC	0	0	0
<b>Grand Total</b>	<b>104</b>	<b>39</b>	<b>143</b>

\*Projects and initiatives vary greatly in scope and scale. Some projects and initiatives provide large-scale resilience services across localities and PDCs (i.e. MPPDC Fight the Flood).

The collected projects represented here provide an initial sample of the substantial resilience project needs within the Commonwealth. Projects were collected through a survey call issued to localities and PDCs. Future CRMP efforts will seek to extend the coverage of this database while moving to a more comprehensive capture of needs across the Commonwealth.



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 +

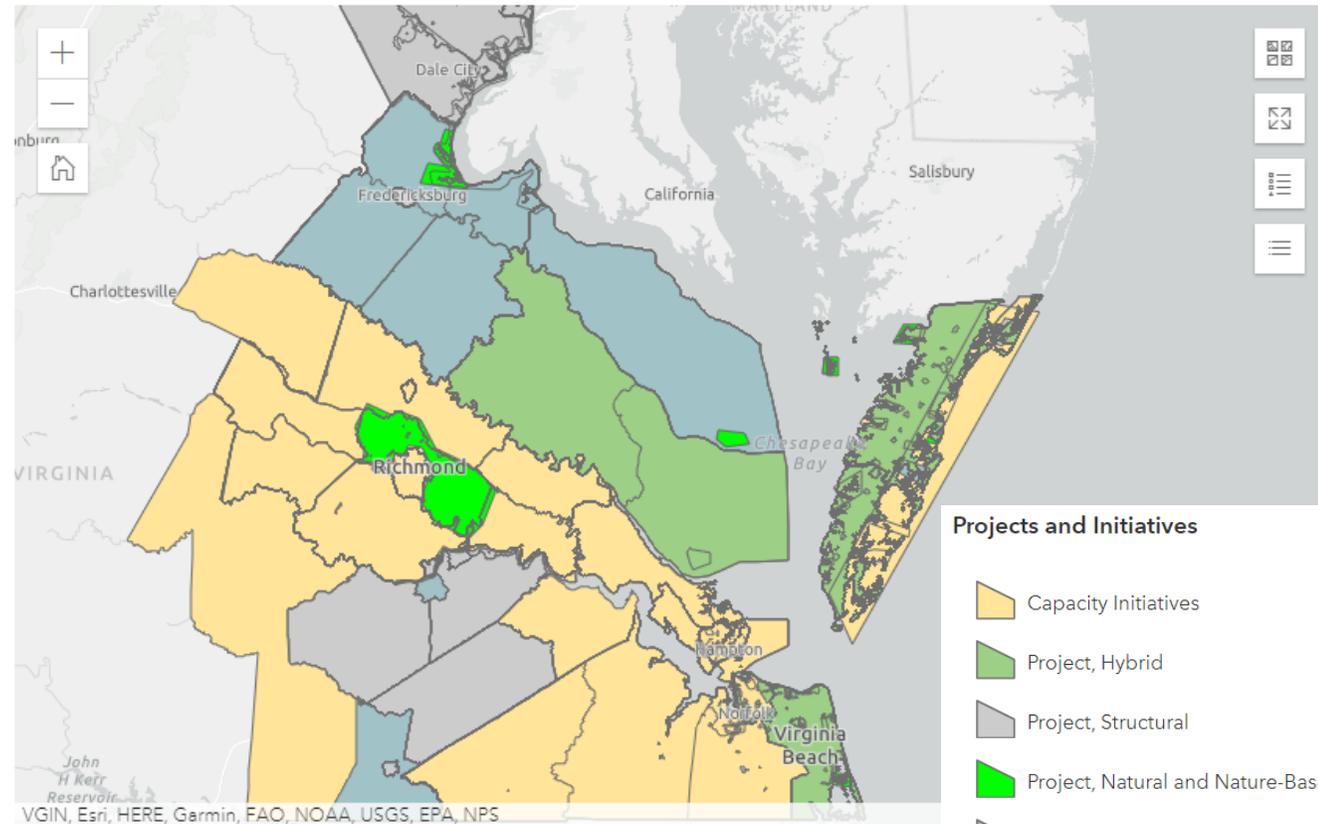
Natural Infrastructure Impact Areas +

Coastal Hazard and Social Vulnerability +

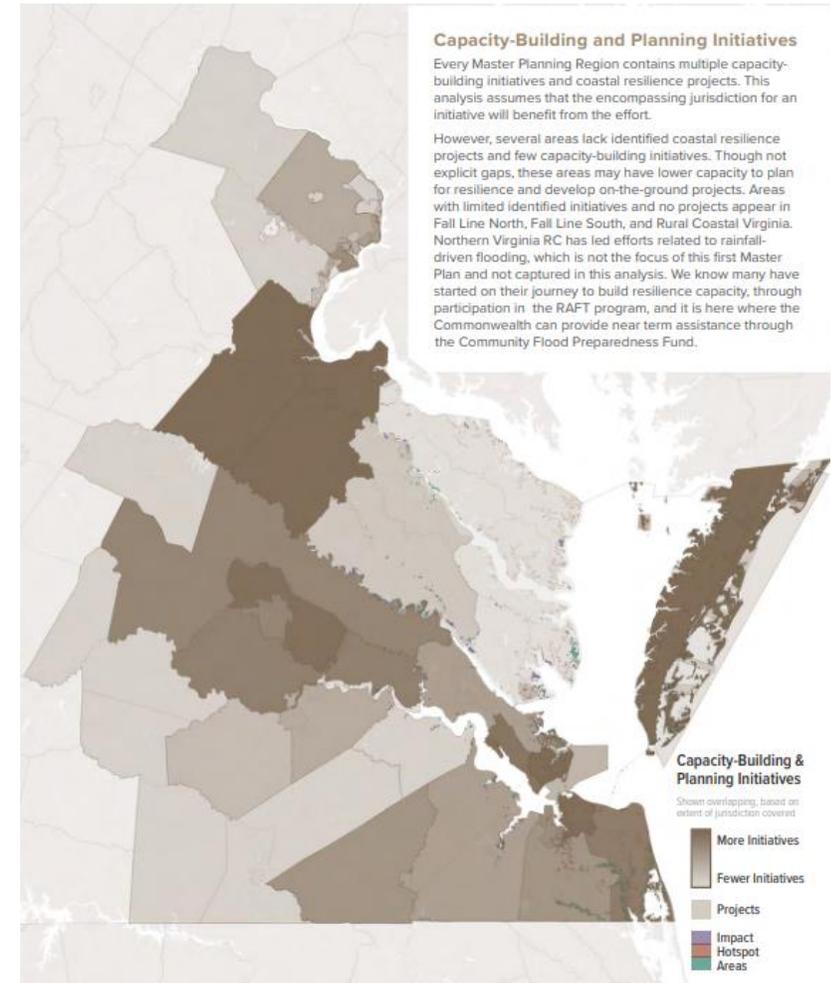
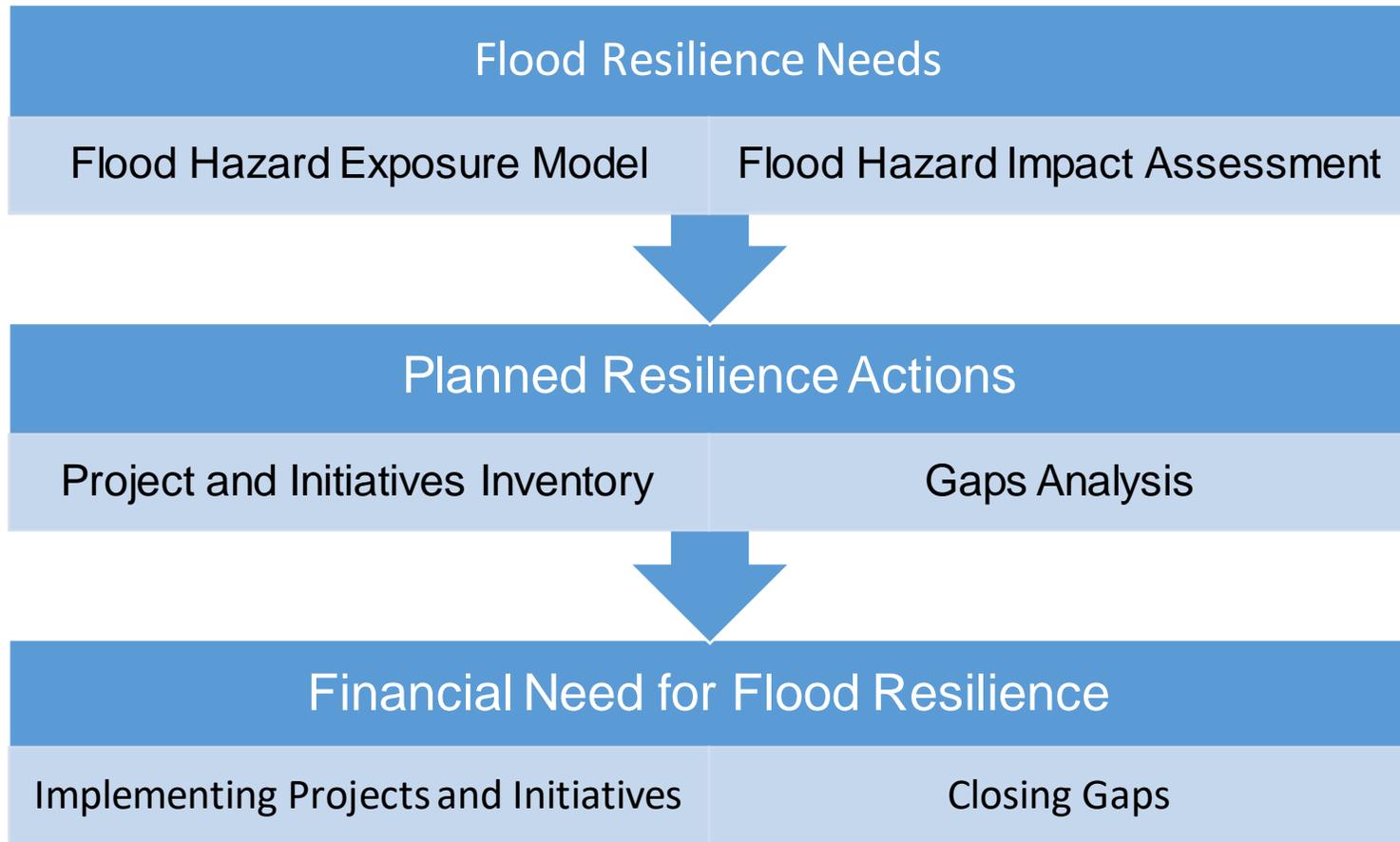
Search:  **Clear**

Projects and Initiatives (Features: 659, 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"/>	Adjustment to Floodplain Ordinance/Restricting Development
<input type="checkbox"/>	Amherst Road Wetlands
<input type="checkbox"/>	Ancell St. & Commonwealth Project
<input type="checkbox"/>	Annual Coastal Bays seagrass restoration
<input type="checkbox"/>	Application of Floodplain Ordinance to potentially developed Local Floodplains from Project ID #28



# How will DCR use the projects and initiatives submitted?



# How will DCR use the projects and initiatives submitted?

- Only those projects and initiatives submitted to the User Portal will be considered for inclusion in the Coastal Resilience Master Plan, Phase II.
- Projects and Initiatives submission deadline = April 1, 2024.

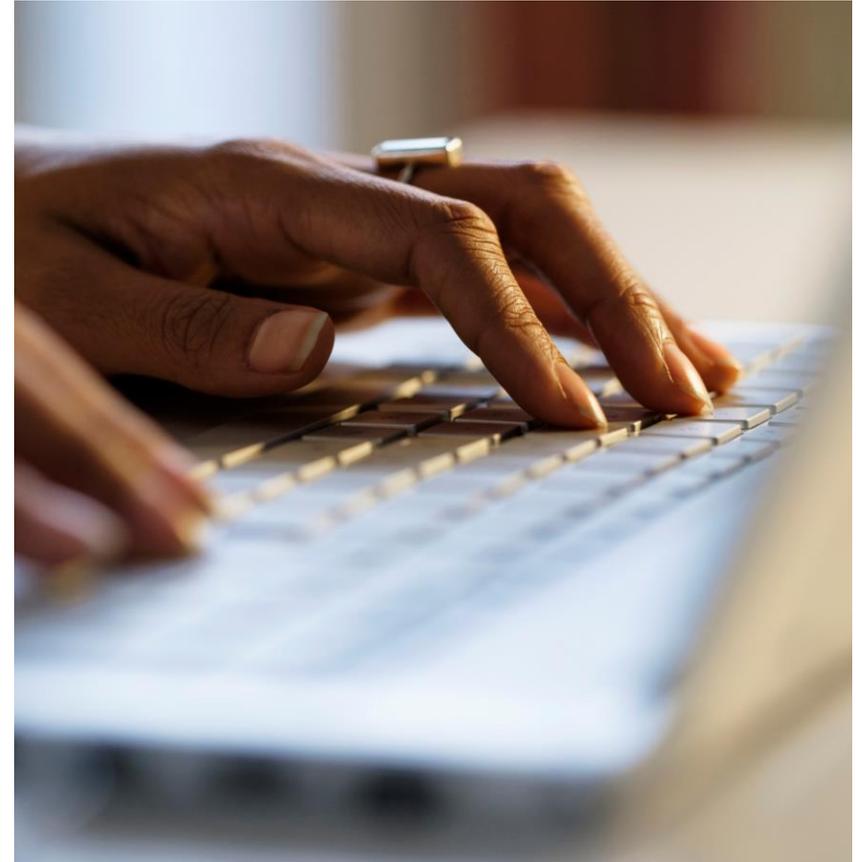
## Next Steps

- Update the project and initiatives inventory
  - **TAC Members:** Please join the portal, update your projects, and help us spread the word.
- Review projects and initiatives
- Distribute requests for additional information
- Conduct gaps and opportunities analysis

# Getting Access

## Setting up your User Portal account

- New users must submit a completed User Access Form (PDF) to DCR.
- Forms can be accessed via DCR's website or the user portal website.
  - [dcr.virginia.gov/crmp/cr-web-explorer](https://dcr.virginia.gov/crmp/cr-web-explorer)
  - [varesilienceexplorer.com](https://varesilienceexplorer.com)
- Submit completed forms to DCR via email at [resilienceexplorer@dcr.virginia.gov](mailto:resilienceexplorer@dcr.virginia.gov).
- Accounts are specific to an individual, not to an organization.
- Users can only add and edit projects for which they are the owner, or for which they have written approval from the owner's organization.



# Research, Data and Innovation Subcommittee

Quarter 4 Update

# Research, Data, and Innovation Objectives

## 1. Inform Development of Flood Hazard Exposure Model.

Using the best available data, provide recommendations to DCR and Dewberry to select pluvial modeling approach (including climate scenarios), advise on the selection of fluvial modeling data and scenarios, and advise on approach to compound flooding joint probability analysis.

## 2. Inform Inputs to Flood Hazard Risk Assessment.

Based on the flood hazard exposure model developed, advise DCR and Dewberry on how to utilize the flood hazard model for conducting the flood hazard risk assessment.

## 3. Develop recommendations for future planning.

This includes, but is not limited to:

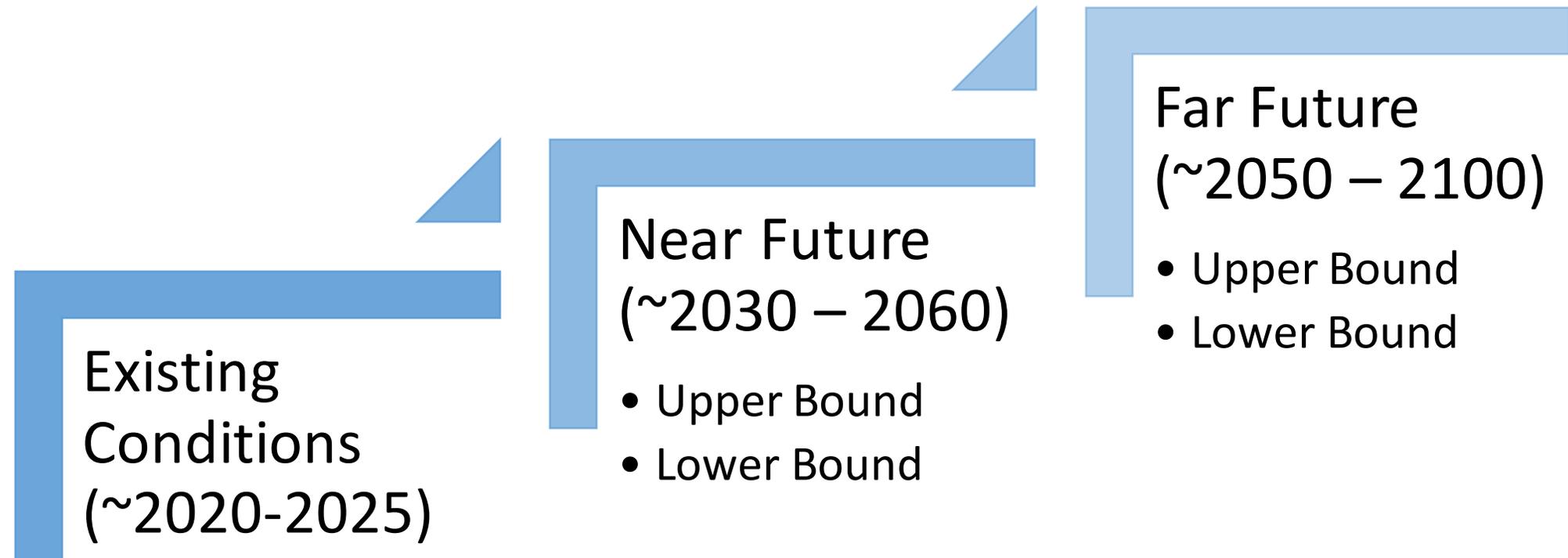
- Develop a data development plan to fill gaps in advance of future planning processes. **Consider research and data products that can meet the state's needs.**
- **Advise on innovations suited to address flood risks and fill gaps in resilience action** for future planning efforts. Consider R&D, public-private partnerships, collaborative research.

# 2023Q4 Subcommittee Meeting Summary

- Reviewed DCR's recommendations for the Pluvial Modeling Decision Points
  - Depth Threshold
  - Land Cover Data
  - Precipitation Values
- Discussed Phase II Flood Hazard Reporting and Planning Scenarios
- Discussed Flood Hazard Data for the Virginia Flood Protection Master Plan

# Phase 2 Flood Resilience Planning Scenarios

Should DCR update the Phase 1 Planning Scenarios?



# Phase 2 Flood Resilience Planning Scenarios

Should DCR update the Phase 1 Planning Scenarios?

## Subcommittee Comments

- There is a preference for a simplified set of the scenarios for the plan with two future planning horizons.
- Instead of lower and upper scenarios, the plan could emphasize the median and the upper bound.
- DCR should contact MARISA to discuss how their data is incorporated into this approach.
- Think about how the data is going to be presented to end users.

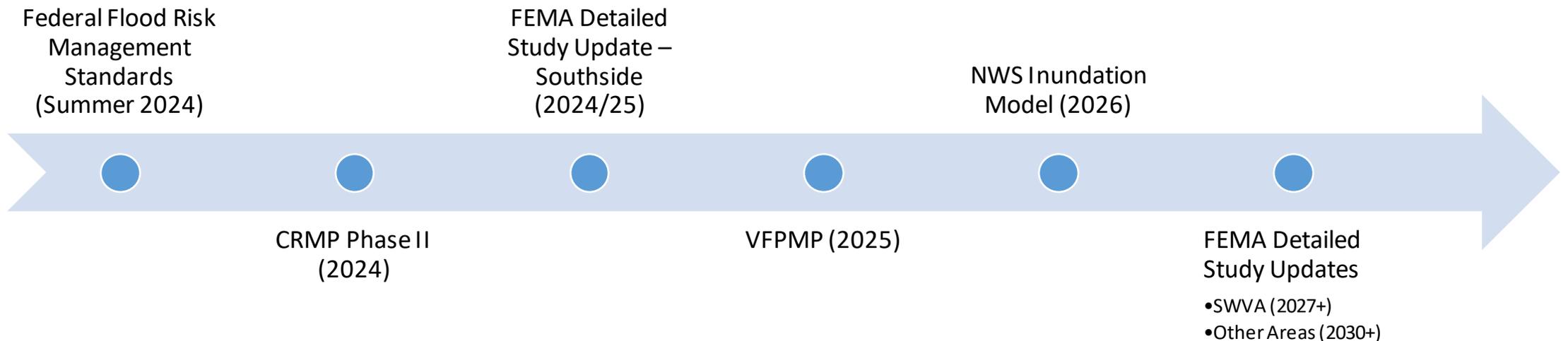
# Virginia Flood Protection Master Plan

## Flood Hazard Data Gaps

There is a range in the level of detail of flood hazard data.



Multiple flood hazard data updates are pending.



# Virginia Flood Protection Master Plan

## Flood Hazard Data Gaps

### Subcommittee Comments:

- Is the existing flood hazard data sufficient for a statewide plan?
  - DCR should consider developing Base Level Engineering (BLE) data.
  - BLE, land use, and other data development should be part of a long-term data development plan for Virginia.
- Should DCR consider 3<sup>rd</sup> Party Flood Hazard Data?
  - Potential legal liability needs to be explored
  - Members offer to help with 3<sup>rd</sup> party flood hazard data evaluation

# Next Steps

- 2024Q1 Subcommittee Meeting (3<sup>rd</sup> Meeting)
  - Select Phase II Flood Hazard Reporting and Planning Scenarios
  - Discuss Phase II Flood Hazard Data Reporting and Organizational Structure
  - Continue Discussions on Flood Hazard Data for the Virginia Flood Protection Master Plan
  - Draft Recommendations for Future Plans
    - Research
    - Data
    - Innovation

# Subcommittee Comments

# DCR Update

# Phase 2 Flood Resilience Planning Scenarios

- “Scenarios do not predict future changes, but describe future potential conditions in a manner that supports decision-making under conditions of uncertainty. Scenarios are used to develop and test decisions under a variety of plausible futures. This approach strengthens an organization’s ability to recognize, adapt to, and take advantage of changes over time” (Parris et al., 2012).
- “Decisions should weigh several factors, such as the type of decision to be made, expected future performance, planning horizon, and overall risk tolerance, including the criticality of the asset and/or the size and vulnerability of the exposed population” (Hall et al., 2016).
- “The best approach for assessing future hazards associated with all types of flooding examined in this report (riverine, coastal, pluvial, compound) usually is to rely on analysis of multiple plausible and decision-relevant climate scenarios.” ([FFRMS CISA State of the Science Report](#))

# Phase 2 Flood Resilience Planning Scenarios

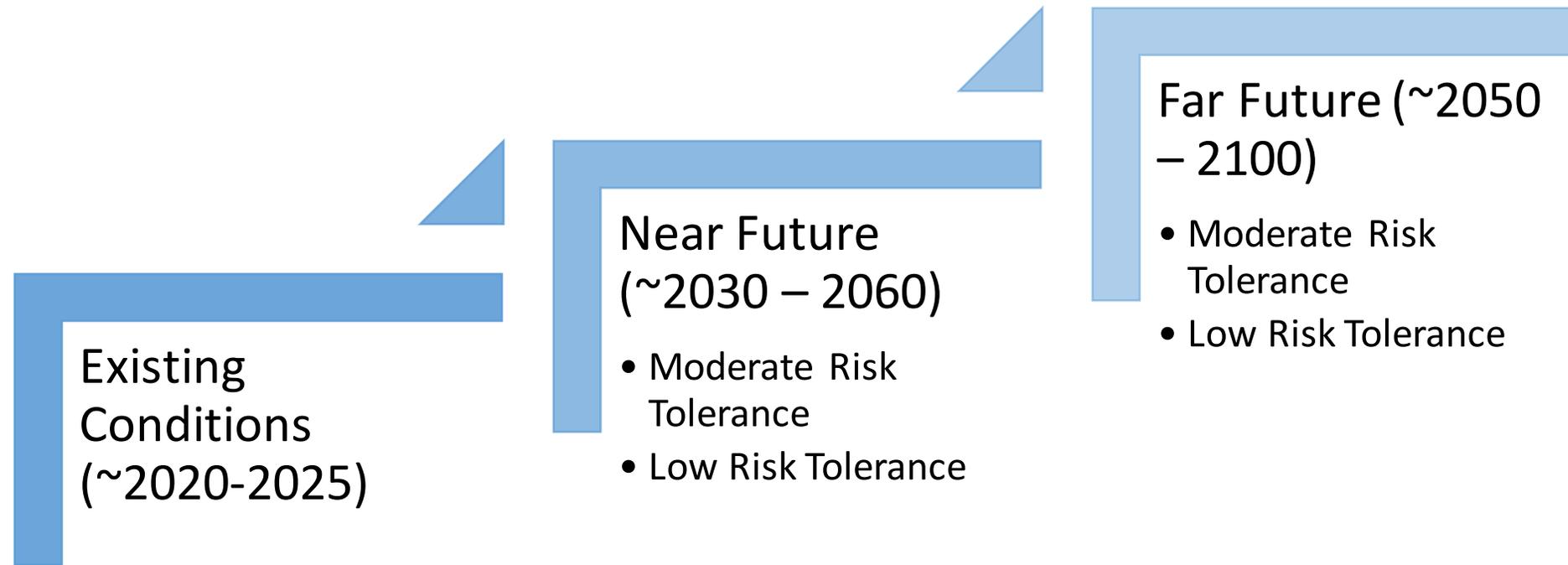
Existing Conditions ~2020-2025		Near Future ~2030-2060		Far Future ~2050-2100	
		Scenario A	Scenario B	Scenario Y	Scenario Z
Coastal	2020 CRMP	2040 CRMP?	2060 CRMP?	2060 CRMP?	2100 CRMP?
Pluvial	Atlas14	2020-2070 RCP 4.5?	2020-2070 RCP 8.5?	2050-2100 RCP 4.5?	2050-2100 RCP 8.5?
Fluvial	FEMA	FEMA	FEMA +1.0-ft*?	FEMA	FEMA + 2.0-ft*?

Coastal Flood Hazard Values: NOAA 2017 Sea Level Rise Intermediate-High Values (2100 GMSL ~1.5m)

Pluvial Flood Hazard Values: Median Values at different RCPs, Upper and Lower Bounds of a Single RCP,...?

\*Fluvial Flood Hazard Values: FEMA 1% AEP Depth Grid is limited in the project area

# Phase 2 Flood Resilience Planning Scenarios

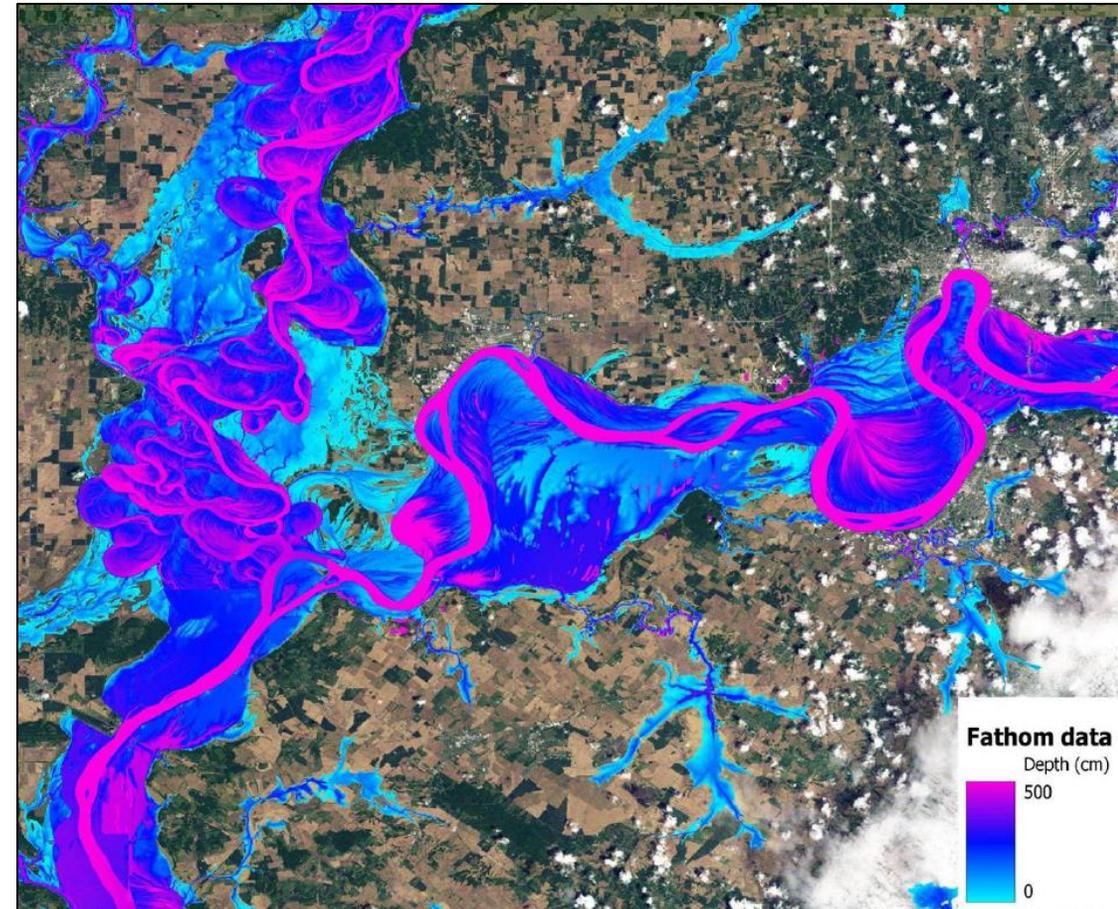


## MARISA Team Input on Mixed Planning Scenarios

- Input: Both approach have been utilized
- Recommendation: Focus on decision making and communication

# Fathom Flood Hazard Data Evaluation

- Virginia Flood Protection Master Plan
- Fathom Flood Hazard Data
- Evaluation Overview
  - Evaluation Team
  - Two Evaluation Sites
    - Dahlgren
    - Farmville
  - Jan-Feb 2024



# TAC Discussion

Questions and Comments

# Project Prioritization Subcommittee

Quarter 4 Meeting Updates

# Subcommittee Objectives

## Project Prioritization

### 1. Inform and support the flood hazard risk assessment.

- Specifically: the asset data inputs; the approach to quantifying the vulnerability of assets; and impact assessment outputs needed to support decision-making, coordination, and collaboration.

### 2. Inform and support the identification of planned resilience actions.

- Specifically, identify shared themes, and gap trends between projects and initiatives submitted to the Coastal Resilience Web Explorer User Portal.

### 3. Develop recommendations for future planning.

This includes, but is not limited to:

- Identify goals and associated metrics for resilience that should be used to determine project/needs evaluation and prioritization in future plans.
- Develop objective protocols for evaluating and prioritizing identified project **needs** for the Coastal Region.
- Develop a process and objective protocols for evaluating and prioritizing resilience **actions**. (Consider separate evaluation protocols for critical human, built, and natural infrastructure needs.)

# Flood Hazard Impact Assessment

## Proposed Approach by DCR

### Identifying and Grouping Assets:

Use the same asset and context groupings as Phase I. Except:

- Natural infrastructure – add assets based on existing prioritized datasets.
- Critical infrastructure – add new sectors and regroup for VDEM alignment.
- Jurisdictional Resources and Capacity – add datasets or other information.

Asset data inputs will be discussed at Q1 meeting.

# Flood Hazard Impact Assessment

## Proposed Approach by DCR

### Quantifying Flood Impacts:

Use the same assessment methodology as Phase I. Except:

- Use new pluvial and limited fluvial flood models to conduct a unique impact assessment by asset for each flood hazard.
- Where new data is available, look for additional opportunities to measure impacts by asset priority and value.

# Flood Hazard Impact Assessment

## Proposed Approach by DCR

### Reporting Findings:

- Develop a new PDF report
  - Add context and impact stories.
  - Add more hotspots and gaps analyses using impact findings.
- Update the existing Coastal Resilience Web Explorer
- Make tabular and spatial data available to download
- Develop case studies to facilitate use of products

# Themes from the Subcommittee Discussion

- Additional clarity is needed regarding how state agencies will use the plan.
- The plan should summarize impact findings using indexed approaches across jurisdictional and watershed boundaries.
- There is value in elevating natural infrastructure to “critical infrastructure” status, capturing the value of these assets in a monetized way.
- Additional measures of jurisdictional resources and capacity could include an assessment of locality staffing and debt capacity.

# Flood Hazard Impact Assessment

## Next Steps

- DCR will continue to explore and develop an approach to natural infrastructure assets inclusion in the plan, together with key partners.
- Dewberry will review impact assessment asset data inputs and develop recommendations which will be shared at the next subcommittee meeting.

# Subcommittee Comments

# TAC Discussion

Questions and Comments

# Funding Subcommittee

Quarter 4 Meeting Updates

# Funding Subcommittee Objectives

- Inform quantification of financial need for flood resilience.
  - What funding needs should be identified in the CRMP Phase II, including to guide appropriations needs?
- Identify and examine financial tools and processes that are suited and/or needed to implement flood resilience.
- Identify challenges/opportunities to implementing financial tools.
- Develop recommendations for future planning.  
This includes, but is not limited to:
  - Recommend approach to quantifying and presenting financial need for flood resilience during future planning efforts.

# 2023Q4 Subcommittee Meeting Summary

- Presentation on Financial Resilience Tools
- Funding Subcommittee Lines of Effort
  - Identify the needs across the lines of effort
- Next Steps

# Discussion of Resilience Tools

Jimmy Sanderson – Davenport & Company

- Local government financial tools for resilience projects
  - Special Tax/Service District [local government ordinance]
  - Community Development Authority (CDA) [landowner driven]
  - Tax Incremental Financing (TIFS)
  - Regional Taxing Authorities (i.e. NVTA, CVTA, HRTAC)
  - Moral Obligation Bonds
- No single/common tool to fund resilience

# Discussion of Resilience Tools

Jimmy Sanderson – Davenport & Company

## Subcommittee Discussion

- Identifying revenue outside of current budget is a challenge.
- Tools can and may need to be combined within a locality.
- A service district could include the entire locality.
- Can a service district or CDA include multiple localities?
  - Each locality would need a service district or CDA.
  - Single service district or CDA for multiple localities would need a legislative change.
- How to share this type of information as a resource to localities?
- Are there needs/opportunities for the state to support these financial tools?

# Funding Subcommittee Lines of Effort (LOE)

**LOE 1**

Building the Financial Baseline

**LOE 2**

Making the Financial Case

**LOE 3**

Document Opportunities for State Support

**LOE 4**

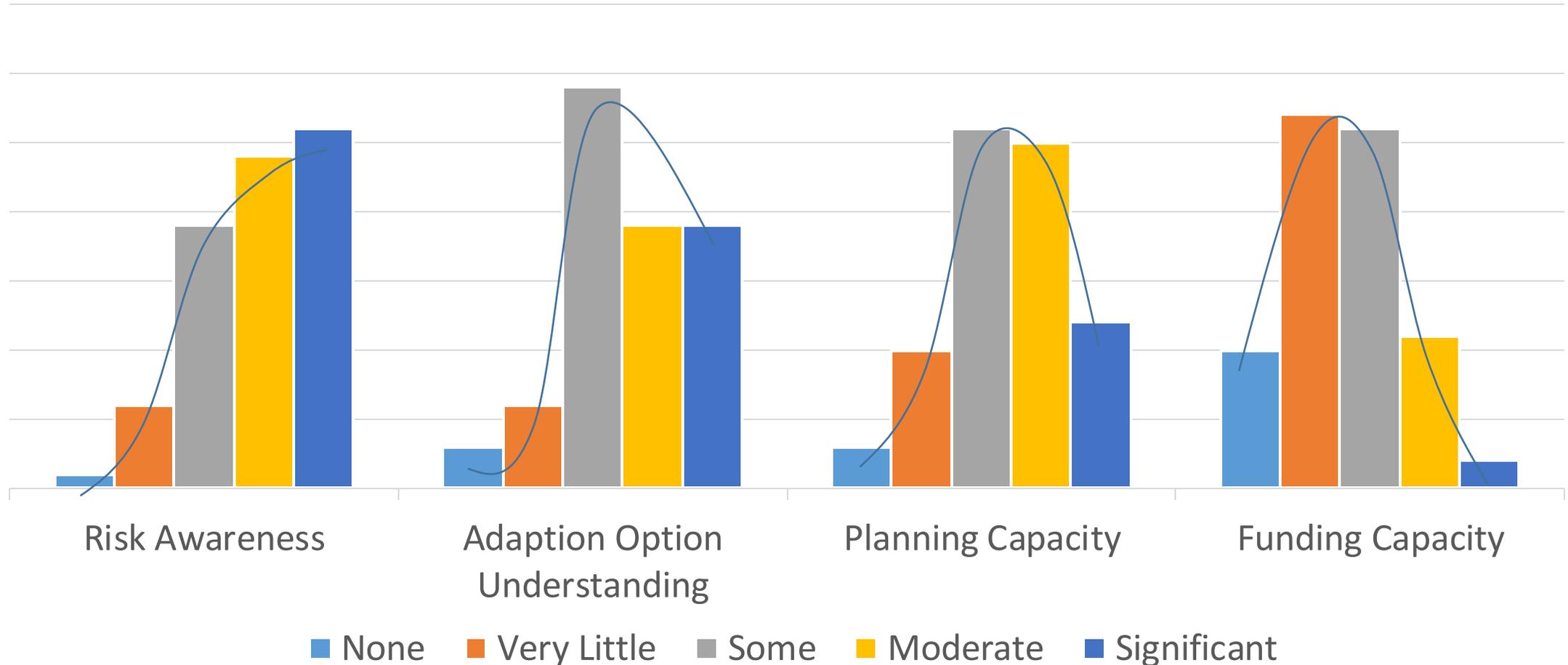
Providing Guidance and Information

# LOE 1 – Building the Financial Baseline

- Natural Infrastructure Baseline Assessment
  - FEMA Ecosystem Services BCA
  - VIMS CCRM Valuation of Marshes and Living Shoreline
- Economic Baseline Data
  - GDP, Population, Per Capita Income, Total Industry Earnings,...
- Locality Financial Capacity and Funding Readiness
  - DHCD Indices (Fiscal Stress, Tax Revenue Dependence, Econ. Vulnerability, Vulnerability Index)
  - # of FTE locality staff supporting resilience, # and \$ of financial opportunities reviewed, sought, secured, and managed.
- Overlay of Federal and State Funding Priorities
  - Federal: Justice40, Community Disaster Resilience Zones,...
  - State: Low Income Geographic Area, Opportunity Zones,...

# LOE 2 – Making the Financial Case

Review CRMP Phase I Organizational Survey Results to Inform Phase II Survey  
(~50% response rate from PDCs and Localities)



# LOE 2 – Making the Financial Case

Review CRMP Phase I Organizational Survey Results to Inform Phase II Survey  
(~50% response rate from PDCs and Localities)

What funding and finance tools have you considered for coastal resilience?



**Common Financial Hurdles Theme: Concerns with Federal Benefit Cost Analysis**

# LOE 3 – Document Opportunities for State Support

- Environmental Scan of Financial Programs
  - Local-led efforts with state support vs State-led efforts with local support
  - Existing programs
  - Gaps/Opportunities
  - Examples Beyond Virginia
- Where are there opportunities for state-led training and technical support for financial tool implementation?

# LOE 4 – Providing Guidance and Information

- Financial Tool Sheets
  - Funding, Financing, and Financial Adjacent Tools
  - Make relevant to Virginia
- Financial Process Mapping
  - Process flow chart, decision support tool, best practices for success
- Other Financial Needs
  - Parametric Insurance Feasibility Study
    - Coordination with DHCD/RISE – Insurance Challenge
  - Public vs Private Land Ownership Mapping

# Next Steps

- Prior to the next meeting
  - Subcommittee members to submit additional financial needs across the lines of effort
- At the next meeting
  - DCR to provide an overview of other State/Regional Plan financial sections
  - Subcommittee members to prioritize financial needs
    - CRMP Phase 2 vs Future Plans

# Subcommittee Comments

# TAC Discussion

Questions and Comments

# Outreach and Coordination Subcommittee

## Quarter 4 Meeting Updates

# Subcommittee Objectives

## Outreach and Coordination

### **1. Inform and support outreach and engagement for the CRMP Phase II.**

- Specifically: identify and prioritize stakeholders to engage; advise on purpose, goals and strategies for stakeholder engagement consistent with DCR's COEP; guide implementation of engagement strategies.

### **2. Strengthen relationships with key stakeholders identified as critical to engaging in the CRMP Phase II.**

- Examples include, but are not limited to minority communities, Tribal Nations, the Department of Defense, critical infrastructure facility owners, and other federal facilities owners.

### **3. Develop recommendations for future planning.**

This includes, but is not limited to:

- Identifying sustainable outreach and engagement goals and strategies for state support to build coastal resilience beyond CRMP Phase II.
- Developing locality capacity and needs assessment approaches.

# Outreach and Engagement Strategy

## DCR Updates

- Presented the full, updated strategy for subcommittee feedback.
  - Goals
  - Stakeholders
  - Engagement methods
- Requested feedback on:
  - Any needed revisions to the strategy before implementation.
  - Identifying priority localities, community-based organizations, and information sharing networks.
  - Metrics for monitoring progress.

# Outreach and Engagement Strategy

## O&C Subcommittee Feedback

### Overarching Comments:

- Focus on leveraging and coordinating with other existing flood resilience outreach and engagement efforts where possible.
  - Ex., Eastern Shore NSF CoPe-funded project led by UVA's Environmental Institute
- Minimize barriers to participation by lowering the time and effort needed to provide feedback wherever possible.
  - Capacity is limited.

# Outreach and Engagement Strategy

## O&C Subcommittee Feedback

### **Tribal Engagement**

- Connect with all tribes via an initial meeting prior to any efforts to establish smaller groups for workshops.

### **Locality Engagement**

- Rework the approach to prioritizing localities for meetings.
  - Don't discount localities recently participating in the RAFT; they are well prepared to engage.
  - Include Towns in meetings.
  - Consider risk from all flood sources.

# Outreach and Engagement Next Steps

## **DCR Staff will:**

- Incorporate feedback on the strategy.
- Connect offline with subcommittee members for additional feedback.

## **TAC Subcommittee members will:**

- Provide information to DCR about known outreach and engagement efforts with which the plan should coordinate.

# Subcommittee Comments

# TAC Discussion

Questions and Comments

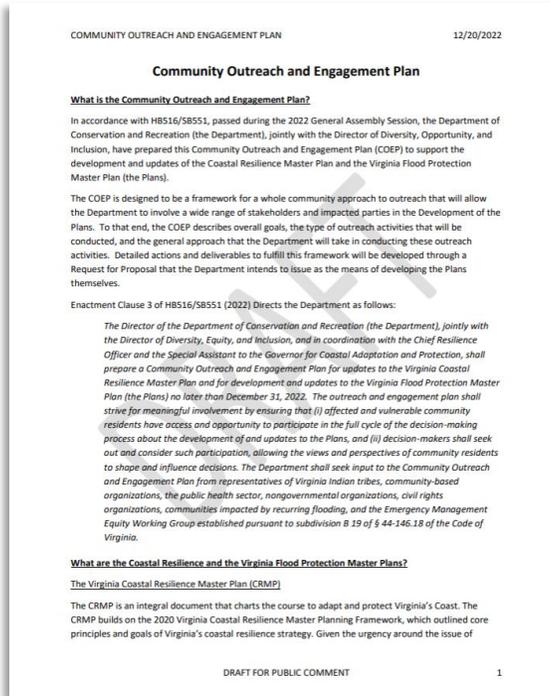
# Old Business

# New Business

CRMP Phase II Outreach & Engagement Strategy

TAC Member Discussion

# Community Outreach and Engagement Plan



Framework for stakeholder engagement in developing DCR’s resilience master plans.

# CRMP Phase I Outreach and Engagement

## Stakeholder Engagement

Understanding how communities live with water is critical to ensuring the Master Plan equitably addresses flooding issues for all Virginians. Residents who live and work in coastal Virginia had the opportunity to provide input to the Master Plan through multiple in-person and virtual workshops, webinars, public meetings, and surveys. The Commonwealth is leveraging the information gained through these processes to conceptualize, implement, and support successful and lasting resilience strategies.

Building a dynamic and long-term participatory stakeholder engagement strategy is essential to capture and reflect the continual changes that coastal Virginia’s communities and environments experience. The Commonwealth developed a short-term plan to build relationships and conduct outreach in affected areas by working across localities and Planning District and Region Commissions.

The following sections summarize outreach activities during this first iteration of the Master Plan. Information gathered through these activities is integrated throughout this document.

### Voices of Coastal Virginia

Through surveys, webinars, workshops, public meetings, this plan reflects input and knowledge from residents, community organizations, representatives from local, county, and regional government, military installations, and other stakeholders invested in the resilience of coastal Virginia.

**2,000+** people provided input into the Master Planning process via participation in surveys, webinars, virtual and in-person workshops, and public meetings.

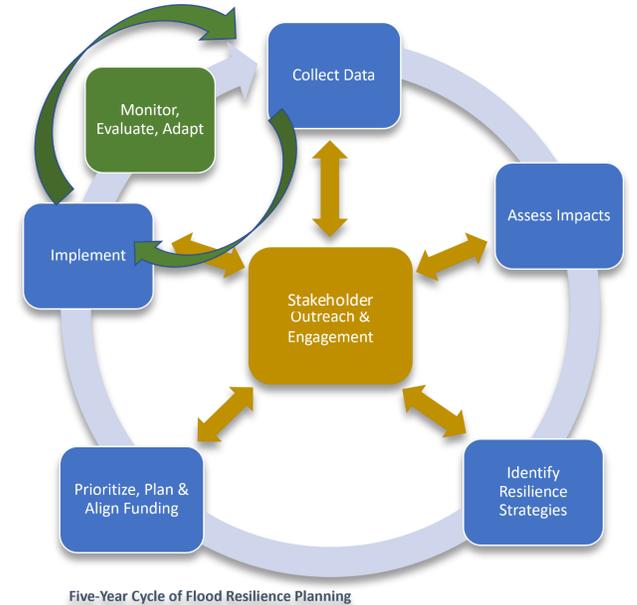
**80%** of residents who responded to surveys believe flooding poses a serious or extreme challenge over the next 20-40 years.

**11%** of residents who responded to surveys said they were very familiar with the Commonwealth’s existing resilience efforts before their engagement.

**68%** of residents who responded to surveys said they believe the Master Plan will benefit their community.

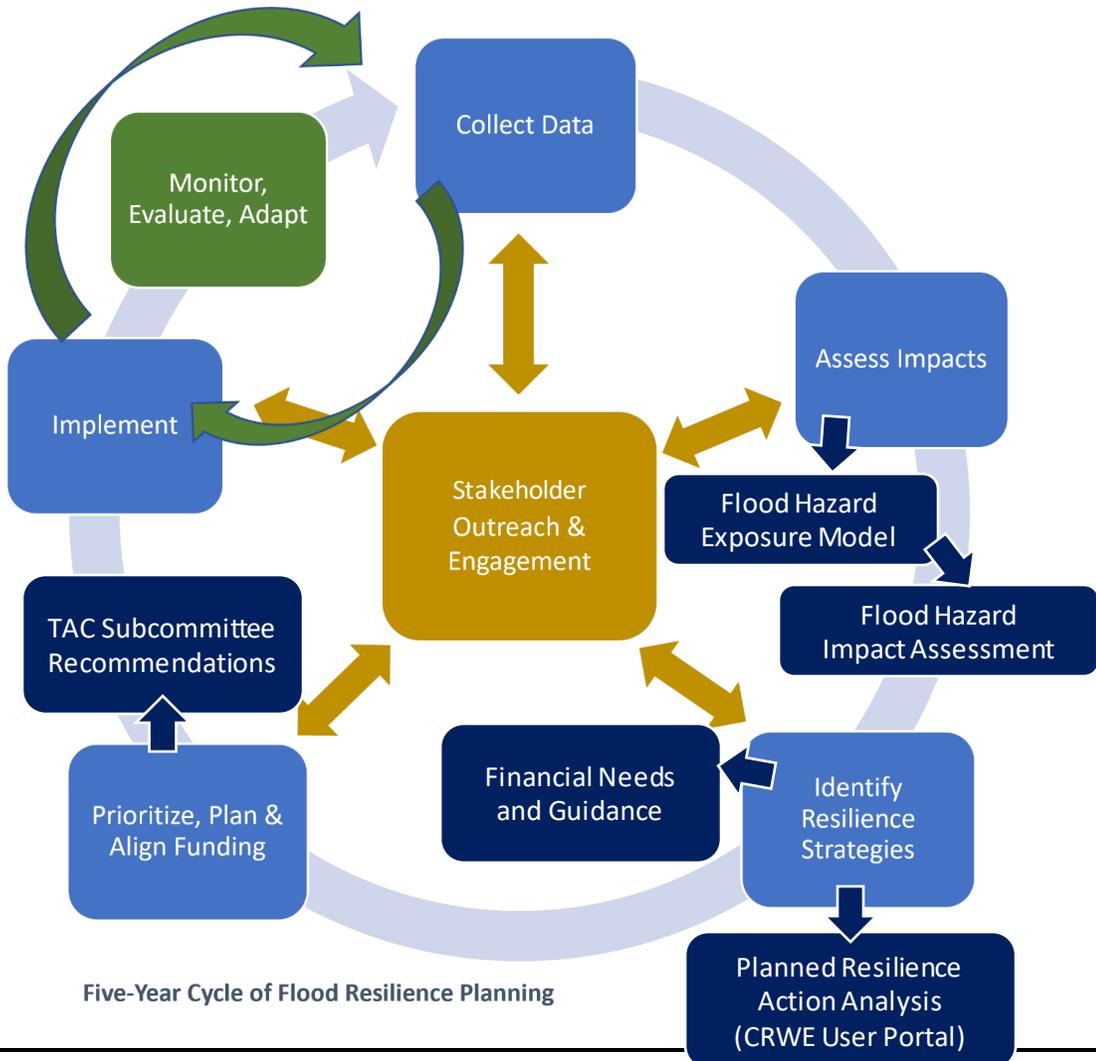
Methods and results for outreach and engagement in Phase I plan.

# CRMP Phase II Outreach and Engagement Strategy



Specific goals, methods, and resources to engage stakeholders in Phase II plan.

# CRMP Phase II Outreach and Engagement Goals



1. **Understand end user needs.** Understand how the plan can be leveraged by intended end users.  
*Localities, PDCs, state agencies, tribes.*
2. **Understand lived experiences with flooding.** Contextualize the plan's content with qualitative data on flood impacts.
3. **Understand existing flood resilience efforts.** Contextualize the plan's content with information on planned and ongoing interventions to address risk in the planning area.
4. **Empower action.** Drive awareness of, and empower whole community action toward, coastal flood resilience.  
*More info on next slide.*

# Through outreach, we intend to inform stakeholders of:

1. The existence, purpose, and contents of the Coastal Resilience Master Plan, Phase II.
2. Opportunities to participate in engagement activities during the planning process.
3. Information to support advocacy on behalf of decisions that will build flood resilience in their communities. *[Audience: underserved communities]*

		Level	Goal
Outreach	}	Inform	Provide information and assist in understanding problem, alternatives, opportunities, solutions.
		Consult	Obtain feedback on analysis, alternatives, decisions.
Engagement	}	Involve	Work directly throughout the process to understand and consider concerns and aspirations.
		Collaborate	Partner in decisions, including developing alternatives and identifying preferred solutions.

*Adapted from IAP2 Spectrum for Public Participation*

# Stakeholder Identification and Analysis

## Tier 1 Stakeholder Types:

### Involve and Collaborate

- State agencies
- Planning district commissions
- Local governments
- State and Federally recognized Tribes of Virginia
- Public universities
- Resilience-focused non-governmental organizations
- Critical infrastructure owners
- Federal partners
- Private sector industry flood resilience service providers (planning, engineering/design, funding consultants, flood insurance providers)
- Economic development partnerships

## Tier 2 Stakeholder Types:

### Consult and Inform

- Private sector other than industry flood resilience service providers
- Other non-governmental organizations
- Community-based organizations
- Key houses of worship
- Underserved communities and low-income geographic areas
- State councils and working groups
- Virginia coastal residents (general public)

**We intend to provide outreach and engagement to all identified stakeholders.**

# Opportunities for Improvement

## Stakeholders to Prioritize for Engagement in Phase II

Organization Type	Proposed Approach to Engaging in Phase II (See Engagement Methods, below)
<b>Some localities</b> , particularly more rural localities with lower vulnerability to coastal flooding.	<ul style="list-style-type: none"> <li>(2) End User Survey</li> <li>(3) Resilience User Portal Promotion and Education / Data Call</li> <li>(6) Locality Meetings</li> </ul>
<b>Some state agencies, boards and commissions</b> , including the Department of General Services, Department of the Treasury, Department of Wildlife Resources, Department of Agriculture and Consumer Services, Virginia Cooperative Extension, Virginia Energy, Virginia Tourism Corporation, and the Port of Virginia.	<ul style="list-style-type: none"> <li>(1) Coastal Resilience Technical Advisory Committee Quarterly Meetings (Advisors/Guests)</li> <li>(3) Resilience User Portal Promotion and Education / Data Call</li> <li>(4) COV-CIP (VDEM) Critical Infrastructure Working Group</li> </ul>
<b>Critical infrastructure owners</b> , including utility providers.	(4) COV-CIP (VDEM) Critical Infrastructure Working Group ongoing collaboration
<b>State and federally recognized Tribes</b> of Virginia's coastal region	<ul style="list-style-type: none"> <li>(1) Coastal Resilience Technical Advisory Committee Quarterly Meetings (Members)</li> <li>(3) Resilience User Portal Promotion and Education / Data Call</li> <li>(5) Tribal Consult Meetings (x~3)*</li> </ul>

# Outreach & Engagement Methods Summary

Collaborate	Involve	Consult	Inform
<i>Partner in decisions, including developing alternatives and identifying preferred solutions.</i>	<i>Work directly throughout the process to understand and consider concerns and aspirations.</i>	<i>Obtain feedback on analysis, alternatives, decisions.</i>	<i>Provide information and assist in understanding problem, alternatives, opportunities, solutions.</i>
<p><b>(1)</b> Coastal Resilience Technical Advisory Committee Quarterly Meetings</p>	<p><b>(2)</b> Resilience User Portal Promotion and Education / Data Call</p> <p><b>(3)</b> COV-CIP Critical Infrastructure Working Group ongoing collaboration</p> <p><b>(4)</b> Tribal Engagement Meetings (x~3)*</p> <p><b>(5)</b> Locality Meetings (x~3)*</p>	<p><b>(6)</b> End User Survey</p> <p><b>(7)</b> Underserved Community Meetings (x~7)*^</p> <p><b>(8)</b> End-Point Public Comment</p> <p><b>(9)</b> Web Explorer Participatory Mapping and Feedback Tool^</p>	<p><b>(10)</b> Monthly NGO Coordination Meetings*</p> <p><b>(11)</b> Mid-Point and End-Point Public Meetings^ (x3 each) (Virtual and Recorded)</p>

Methods may be replaced or altered where it is possible to partner with existing, ongoing engagement efforts to reach intended audiences.

Items appearing with an asterisk are those activities which may benefit from joint outreach/engagement with other DCR teams (FPM, Dam Safety, Soil & Water, etc.). Items appearing with a ^ should be considered for production in multiple languages to connect with non-English speaking audiences.

# Public Outreach Campaign

Method	Description
<b>ORP Quarterly Newsletter</b>	Email newsletter distributed by the DCR Office of Resilience Planning to share updates on ongoing work. The newsletter will contain information about opportunities for public participation in the CRMP Phase II.
<b>Social Media Posts</b>	DCR's social media accounts will feature information and links to updates on the CRMP Phase II and opportunities for public participation. Posts will be featured on platforms including Facebook, Instagram, Twitter, and LinkedIn.
<b>Emails to Key Information Sharing Networks</b>	DCR will distribute key CRMP Phase II updates and opportunities for participation in the CRMP Phase II with other information sharing networks for distribution, such as the VDEM "Partners in Preparedness" Newsletter.
<b>Presentations to Key Information Sharing Networks</b>	DCR will request to present at meetings of networks, councils, commissions, and other groups with a reach across the coastal region to share information for distribution and awareness buildings.
<b>Materials Distribution via other DCR events and partners</b>	DCR will make flyers and handouts available at activities and events hosted by the Floodplain Management or Dam Safety teams that are relevant to coastal flood resilience. DCR will distribute materials to other partners, including NGOs and the TAC. Materials will contain links to DCR webpages and newsletter sign-ups to direct recipients to public participation opportunities.
<b>DCR Webpage Updates</b>	DCR will maintain its website up-to-date with information on opportunities for public participation in the CRMP Phase II.
<b>Press Releases</b>	DCR will use press releases to advertise major CRMP Phase II updates, particularly the release of the final plan.

## Purpose:

- advertise scheduled public participation opportunities;
- build awareness of the CRMP Phase II on an ongoing basis.

# Schedule

Milestone	Date
<i>Launch Coastal Resilience Web Explorer User Portal (complete)</i>	<i>September 2023</i>
Finalize working outreach and engagement strategy	End of November 2023
Finalize public outreach campaign materials design	End of December 2023
★ Receive feedback in response to end user survey	End of December 2023
Conclude tribal engagement meetings, locality meetings	April 2024
Final day to submit projects and initiatives to the Coastal Resilience Web Explorer User Portal for consideration in the plan	End of April 2024
Launch web explorer participatory mapping tool	End of June 2024
Conclude underserved community meetings	Mid-July 2024
Host virtual public meetings	Beginning of August 2024
Post plan to Town Hall for public comment, host virtual public meetings	December 2024

# TAC Member Discussion

# Public Comment

If you would like to provide public comment, please let us know using the Chat window.

# Adjourn