

# Business, Industry, and Economic Development Webinar

Meeting Summary



October 21, 2024 | BIED Meeting Summary



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### A. Meeting Overview

**Coastal Resilience Master Plan Phase II: Business, Industry, and Economic Development (BIED) Webinar**

**Meeting Date:** Monday, October 21, 2024

**Meeting Time and Location:** 12 – 1 PM Virtual on Zoom

The Business, Industry, and Economic Development (BIED) webinar brought together private sector entities, local government practitioners, and community organizations to discuss flood resilience planning as part of the Virginia Coastal Resilience Master Plan (CRMP) Phase II efforts. The session provided an overview of the CRMP, including its history, purpose, and the development of Phase II tools to support the BIED sector in identifying and addressing flood risks. Key topics included flood hazard exposure and impact models, which enable users to assess specific sites for potential flood impacts, along with Phase II data findings relevant to economic sectors. Resilience actions were also highlighted to show how to use these insights when considering new investments or coordinating resilience projects and initiatives.

Throughout the webinar, interactive participation was encouraged through polls and surveys to gather feedback on flooding concerns and assess the accessibility and usefulness of CRMP resources for the private sector. A Question and Answer (Q&A) session addressed participant questions, and next steps for involvement in ongoing resilience efforts were outlined. The session drove awareness, offered practical applications of CRMP tools, and created pathways for future collaboration in flood resilience planning.

### AGENDA

1. Welcome & Introductions
2. Flooding as a Growing Challenge in Coastal Virginia
3. Overview of the Coastal Resilience Master Plan
  - a. History and Background
  - b. Phase I Plan and Findings
4. Coastal Resilience Master Plan, Phase II Update
  - a. Plan Approach and Products
  - b. Plan Findings
5. How to Get Involved
6. Next Steps
7. Q&A Session

**ATTENDANCE**

Total Number of Attendees: 53

**Groups Represented**

AECOM	Northern Neck Planning District Commission
AIA VA	Old Dominion University (ODU)
Arcadis	Pender & Coward PC
City of Fredericksburg	PlanRVA
City of Newport News	Raymond James & Associates
City of Virginia Beach	RES
DeFord Holdings	Smithfield Foods
DHL eCommerce	The Whiting-Turner Contracting Company
Dominion Energy	Towne Bank
Dominion Enterprises	Trust Financing Solutions
Fairweather Associates	VA Department of Housing and Community Development
Henrico County	Verizon
HRSD	VHB
HYPE	VIA Design Architects
ICAR/ODU	Virginia Beach Vision
Independent	Virginia Department of Emergency Management (VDEM)
JRSWCD	Walgreens
LRNow	Wetland Studies and Solutions, Inc.
McLean Contracting Company	Woolpert
McLeskey	WSP
Mead & Hunt	WSSI

**DCR Staff and Consultants**

Matt Dalon (DCR)	Cece Atkinson (Launch! Consulting)
Ashley Hall (Stantec)	Rebekah Cazares (Launch! Consulting)
Linda Warren (Launch! Consulting)	Sarah Girard (Launch! Consulting)

## NOTES

- Matt Dalon (DCR) kicked off the meeting by introducing the project team and presenters, as well as providing an overview of the CRMP. This included its history, background, findings from Phase I, and updates for Phase II.
- Ashley Hall (Stantec) shared preliminary findings from Phase II focused on BIED sectors' flood exposure data and resilience actions. These are available in the Coastal Resilience Web Explorer (CRWE) and emphasize the importance of public-private collaboration in addressing flooding challenges.
- Throughout the meeting, interactive polls were used to better understand which groups were represented, flooding impacts on BIED sectors, and involvement in resilience projects and initiatives. The following provides the results from the series of poll questions broken down across the three categories (note: polls were optional, and responses do not reflect all participants present in the meeting).
- Matt Dalon (DCR) offered different ways the BIED partners could stay involved in the CRMP planning efforts, which included:
  - **Quarterly Newsletter:** A newsletter will be issued quarterly to keep participants updated on CRMP developments and related activities.
  - **Future Engagement Opportunities:** The meeting concluded with a reminder of upcoming opportunities for public engagement, including the release of the CRMP plan, public comment opportunities, and public webinars.

## Q&A SESSION

At the end of the meeting, Linda Warren (Launch! Consulting) facilitated a question-and-answer session.

- Q: Is the presentation going to be shared with attendees?
  - A: Linda confirmed that email copies of meeting information would be sent to attendees who provided contact information. Matt added that nearly all meeting resources are posted on the website, and attendees can reach out to DCR if they cannot locate specific documents.
- Q: Near term planning horizon was 2030-2060 and noted 1.7'-3' Sea Level Rise. From what year was the base Sea Level Rise of 1.7' noted (1990, 2000)?
  - A: Matt Dalon (DCR) discussed defining baseline data, noting that backward-looking data may not fully reflect current conditions. For coastal flooding, baseline data is drawn from the 2020 Coastal Resilience Master Plan Phase I, adjusted for observed changes in mean sea level up to 2020. Rainfall data follows the Atlas 14 standards, while riverine flooding lacks future projections, as that data isn't publicly available. Detailed modeling and impact analysis can be found in the appendices.

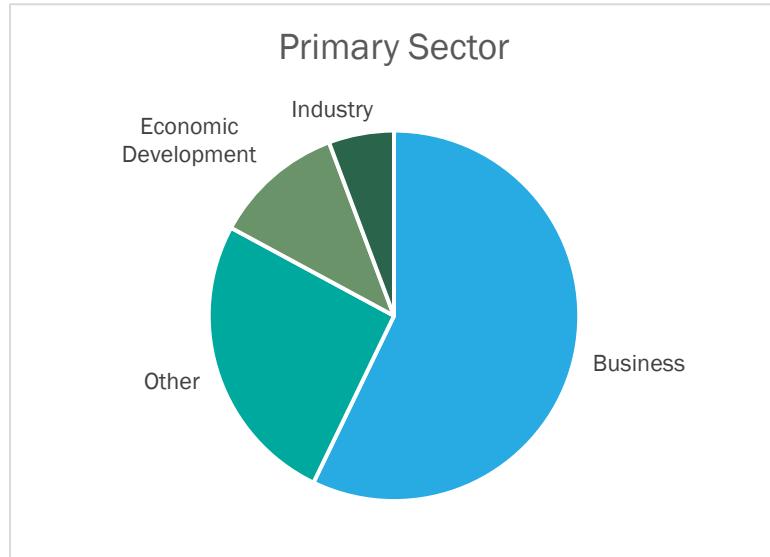
- Q: Is Phase II of the Master Plan compiling legislative recommendations, especially regarding funding from the Commonwealth or elsewhere (FEMA, etc.)?
  - A: Matt Dalon (DCR) clarified that the project is guided by current legislation requiring a comprehensive flood impact analysis across all major sources of flooding, including a detailed inventory. They are not developing new legislative recommendations but are mindful of existing legislative requirements.

## B. Poll Questions and Answers

### B.1 INTRODUCTIONS

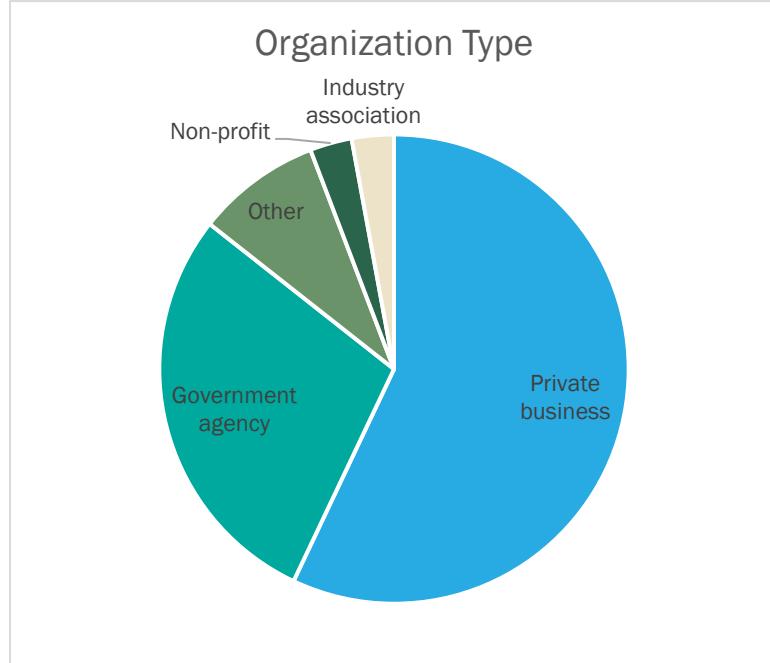
#### Q1: Which sector do you primarily represent?

- Business 57.1%
- Other 25.7%
- Economic Development 11.4%
- Industry 5.7%



#### Q2: What type of organization do you represent?

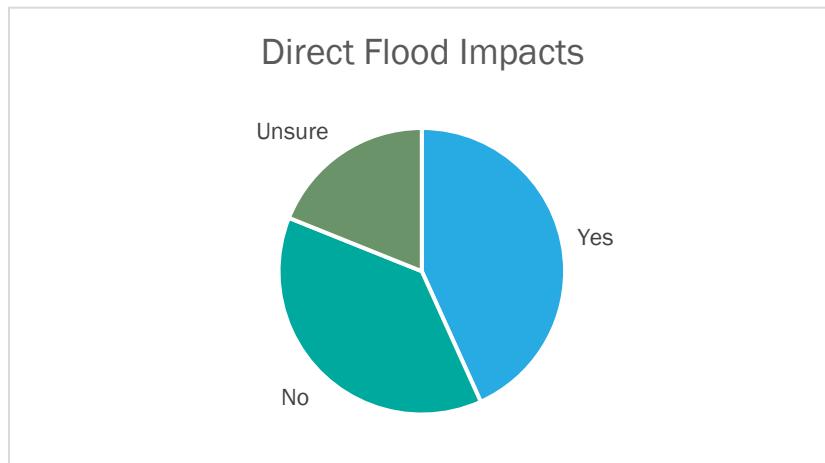
- Private business 57.1%
- Government agency 28.6%
- Other 8.6%
- Non-profit 2.9%
- Industry association 2.9%



### B.2 FLOOD IMPACTS

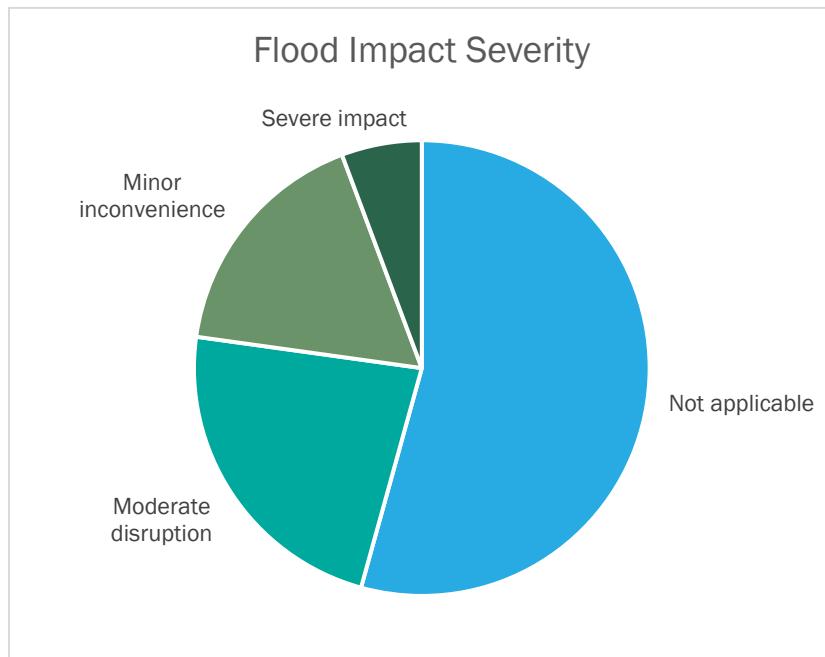
**Q3: Has your business or organization been directly impacted by flooding in the past?**

- Yes 43.2%
- No 37.8%
- Unsure 18.9%



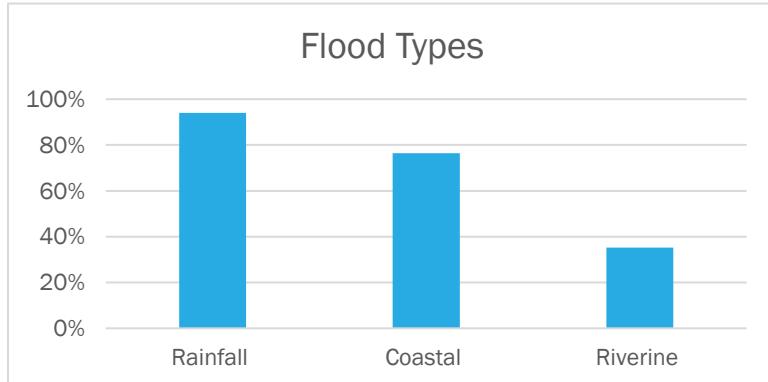
**Q4: If yes, how severely has your business or organization been affected by flooding in the past?**

- Not applicable 54.3%
- Moderate disruption (e.g., property damage, short-term financial loss) 22.9%
- Minor inconvenience (e.g., temporary closure) 17.1%
- Severe impact (e.g., long-term closure, significant financial loss, permanent damage) 5.7%



**Q5: What type of flooding has impacted your business or organization?  
(select all that apply)**

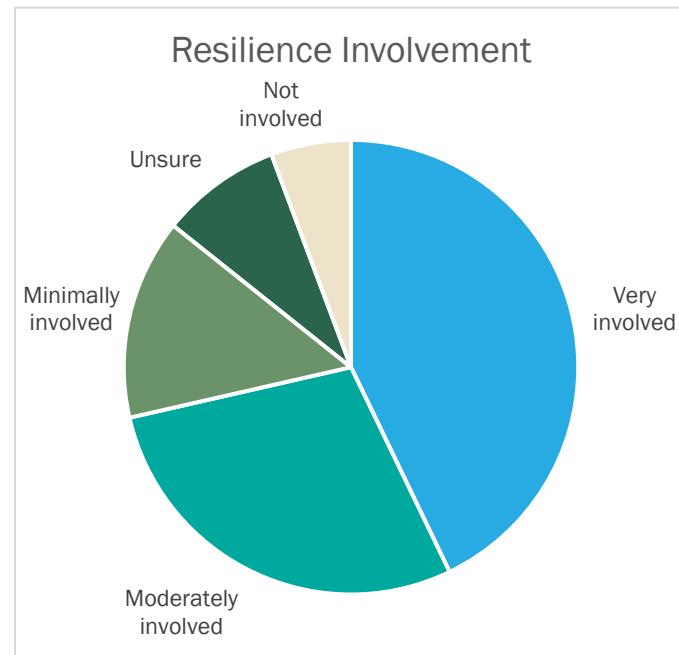
- Rainfall 94.1%
- Coastal 76.5%
- Riverine 35.3%



### B.3 RESILIENCE ACTIONS

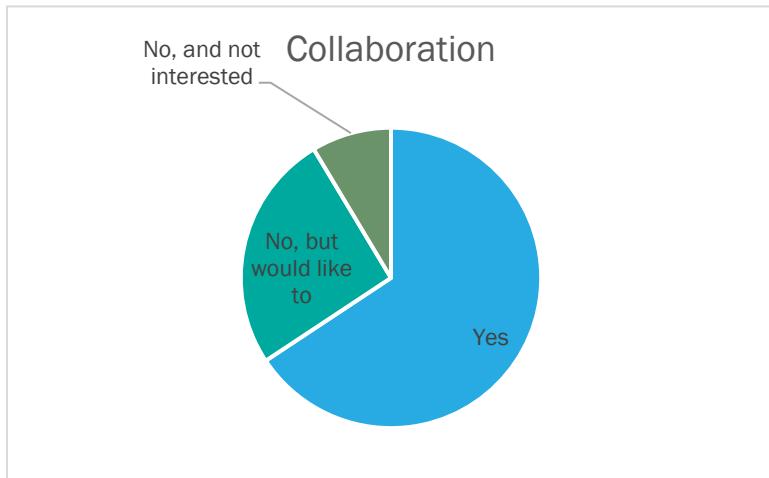
**Q6: How involved is your business or organization in community or regional flood resilience projects or initiatives?**

- Very involved (e.g., leadership roles, active participation in initiatives) 42.9%
- Moderately involved (e.g., occasional involvement, partnerships) 28.6%
- Minimally involved (e.g., awareness, but no active participation) 14.3%
- Unsure 8.6%
- Not involved 5.7%



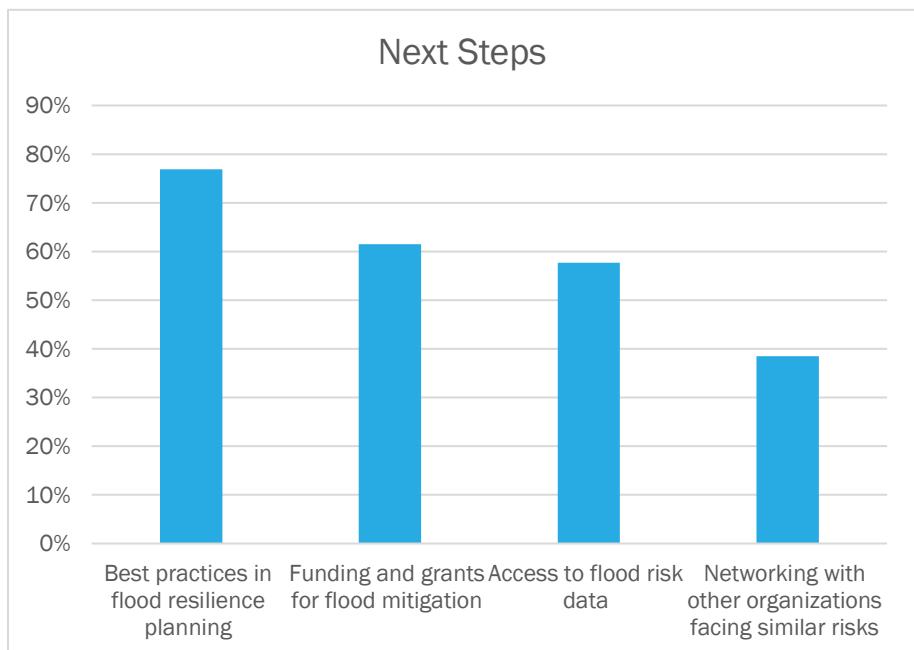
### Q7: Are you currently working with any local, state, or federal agencies on flood resilience projects or initiatives?

- Yes 65.7%
- No, but would like to 25.7%
- No, and not interested 8.6%



### Q9: Which aspects of flood resilience would you like more support or information on? (Select all that apply)

- Best practices in flood resilience planning 76.9%
- Funding and grants for flood mitigation 61.5%
- Access to flood risk data 57.7%
- Networking with other organizations facing similar risks 38.5%





VIRGINIA COASTAL  
**RESILIENCE  
MASTER PLAN**

# Coastal Resilience Master Plan, Phase II

Business, Industry, and Economic Development (BIED) Webinar | October 21, 2024

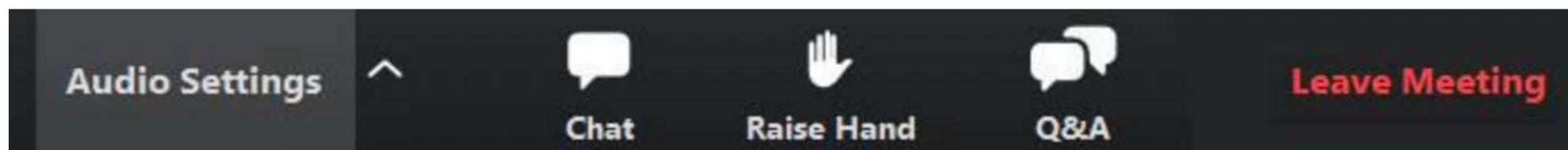


Photo: Virginia Department of Conservation & Recreation

# Welcome!

# How to Use Zoom Webinar

- **Setting Up Your Audio**
  - As an attendee of the Webinar, you are not able to talk, but you will hear the hosts.
  - Please click, “Join with Computer Audio” as you enter the webinar to hear the hosts.
  - Click the “Audio Settings” button in the bottom left corner to adjust as needed.
- **Leaving the Meeting**
  - You can choose to leave the meeting if needed. Just click the “Leave Meeting” button at the bottom right corner of the screen.
- **Asking Questions**
  - Please click the “Q&A” button at the bottom to type your questions at any time.
  - A window will appear for you to type in the questions and hit “submit.”
- **Engaging Through the Chat Feature**
  - Click the "Chat" button to send messages to the host or panelists about any technical difficulties, like if you are having trouble hearing the speakers.



# Today's Agenda

- Welcome & Introductions
- Flooding as a Growing Challenge in Coastal Virginia
- Overview of the Coastal Resilience Master Plan
  - History and Background
  - Phase I Plan and Findings
- Coastal Resilience Master Plan, Phase II Update
  - Plan Approach and Products
  - Plan Findings
- How to Get Involved
- Next Steps
- Q&A Session



# Introduction to our Speakers



**Matt Dalon**

*Program Manager,  
DCR ORP*



**Ashley Hall**

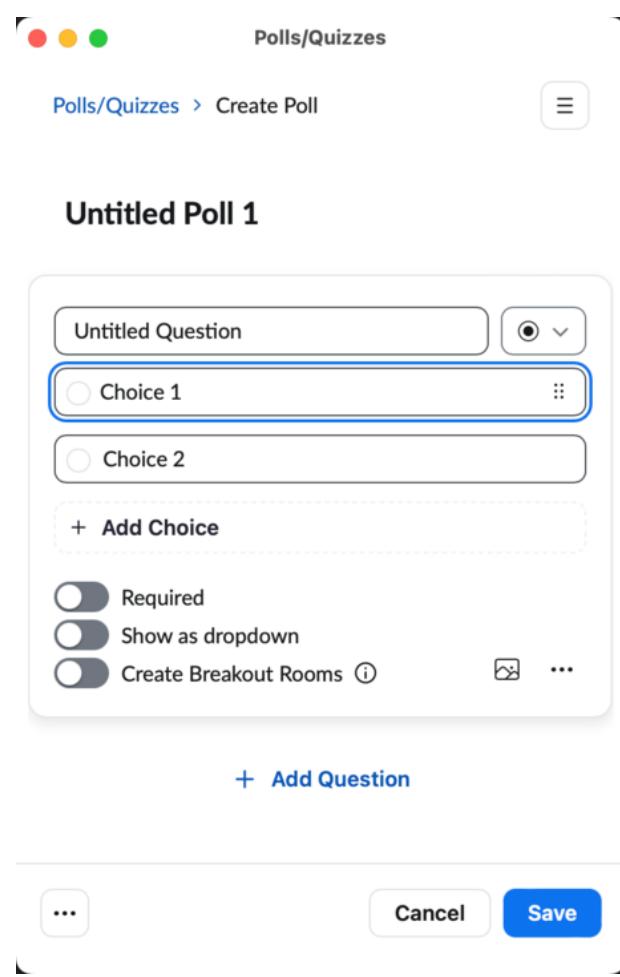
*Senior Engineer,  
Stantec*



**Linda Warren**

*Senior Facilitator and  
Resilience Specialist,  
Launch! Consulting*

# Participant Poll - Introduction



The screenshot shows a poll creation interface. At the top, there are three colored dots (red, yellow, green) and the text "Polls/Quizzes". Below that, a breadcrumb navigation shows "Polls/Quizzes > Create Poll". The main area is titled "Untitled Poll 1". A question card is displayed with the title "Untitled Question" and a radio button set to "Choice 1". Below the question are two choice options: "Choice 1" and "Choice 2". There is a "+ Add Choice" button. Underneath the choices are three toggle switches: "Required" (on), "Show as dropdown" (on), and "Create Breakout Rooms" (off). At the bottom of the card are "Cancel" and "Save" buttons.

Please respond to the anonymous poll that appears on your screen

# Flooding as a Growing Challenge in Coastal Virginia

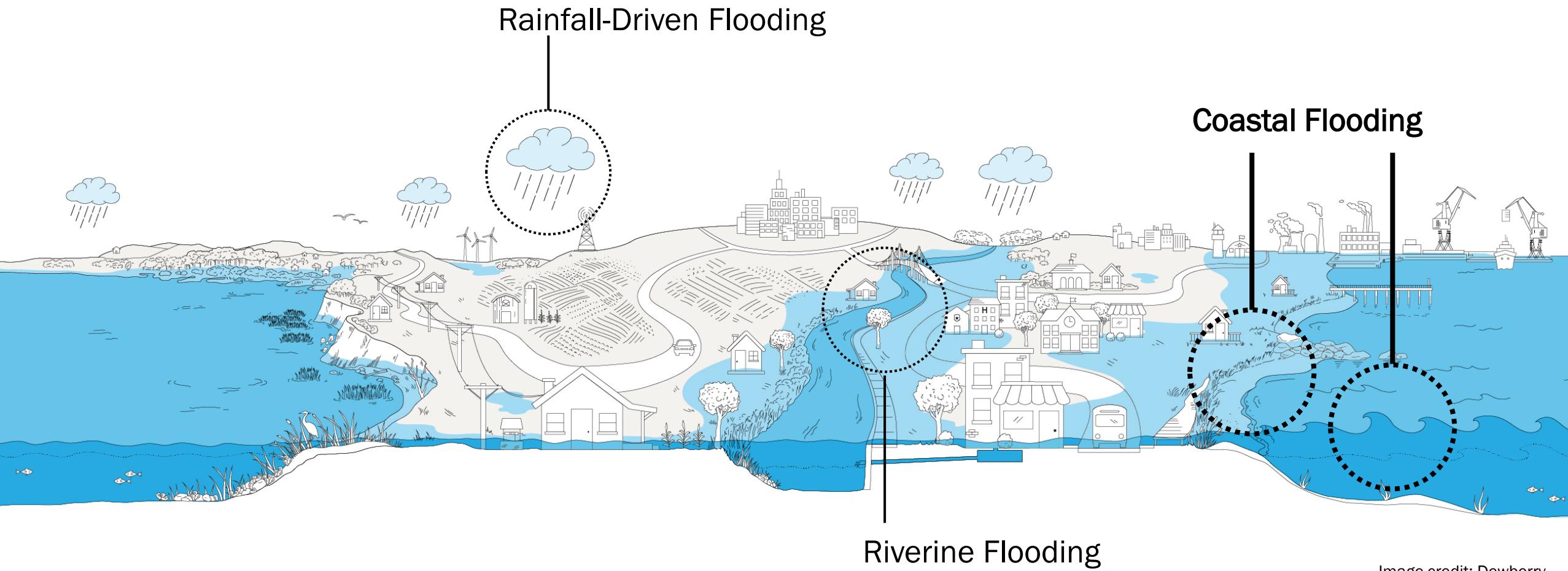


Image credit: Dewberry

# Coastal Flooding



*Flooding from Hurricane Isabel, September 2003, Norfolk, VA  
Source: U.S. Navy, Photographer's Mate 1<sup>st</sup> Class, Michael Pendergrass*



*Sunny day flooding, May 2022; Hampton, VA*

## Rainfall-Driven Flooding

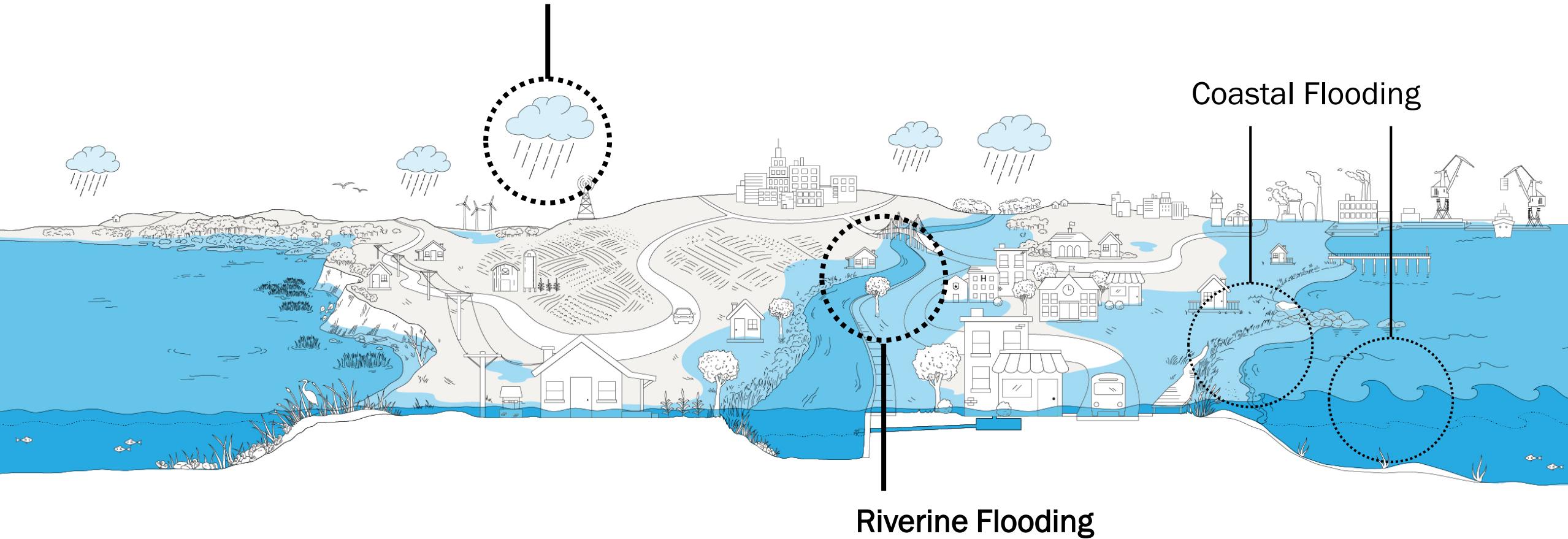


Image credit: Dewberry

# Rainfall-Driven Flooding and Riverine Flooding



A car surrounded by water in Wolf Trap, Fairfax, VA, 2021  
Source: Fairfax County government/Twitter via [Tysons Reporter](#)



Roadway flooding in Clifton, Virginia, 2014  
Source: Fairfax County, Licensed with CC BY-NC-ND 2.0, via [Flickr](#)

# Overview of the Coastal Resilience Master Plan

*History & Background*

## Virginia Department of Conservation and Recreation (DCR)

- **Who We Are:** Virginia's lead natural resource conservation agency
- **What We Do:** Enable and encourage people to enjoy and benefit from Virginia's natural and cultural resources
- **What We Value:** The diversity of nature, culture and communities to ensure a sustainable and equitable future for recreational access and a healthy environment for all Virginians to enjoy.
- **How We Do It:** DCR accomplishes its mission through funding, expertise, education, acquisition and improved access.



# DCR Office of Resilience Planning

Planning for a flood resilient future.

DCR

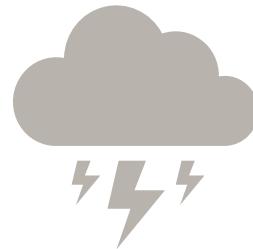
Division of  
Dam Safety

Division of  
Floodplain  
Management

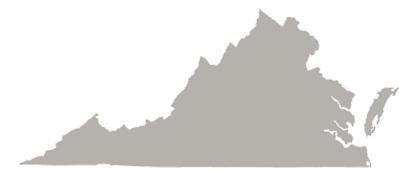
Office of  
Resilience  
Planning

# Our Flood Resilience Mission

Distribute knowledge and coordinate action to achieve a flood-resilient future for Virginia through informed planning and proactive, intergovernmental solutions.



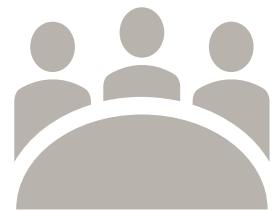
Address challenges related to flooding and resiliency



Establish programs that work for all impacted parts of Virginia



Create comprehensive, cohesive plans and ensure our programs work together

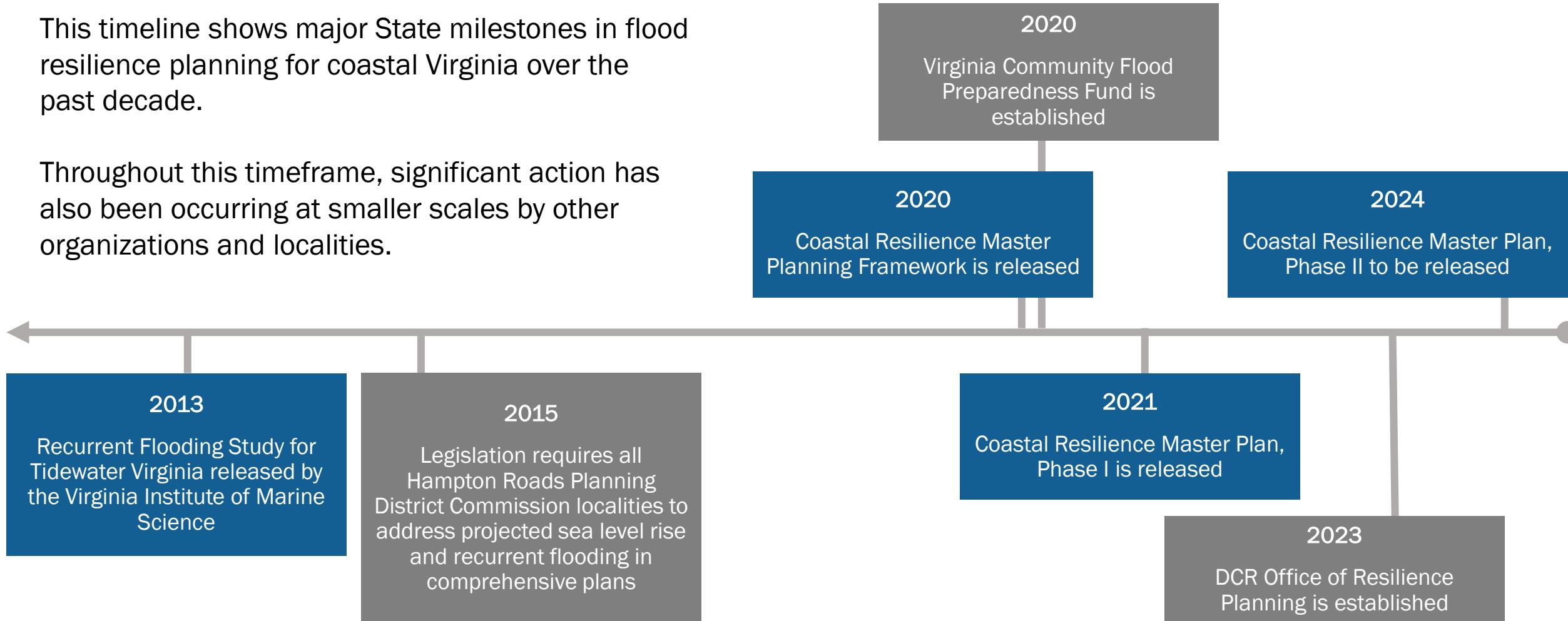


Develop and implement programs and plans with transparency and input from the public

# Coastal Resilience Master Planning in Virginia

This timeline shows major State milestones in flood resilience planning for coastal Virginia over the past decade.

Throughout this timeframe, significant action has also been occurring at smaller scales by other organizations and localities.

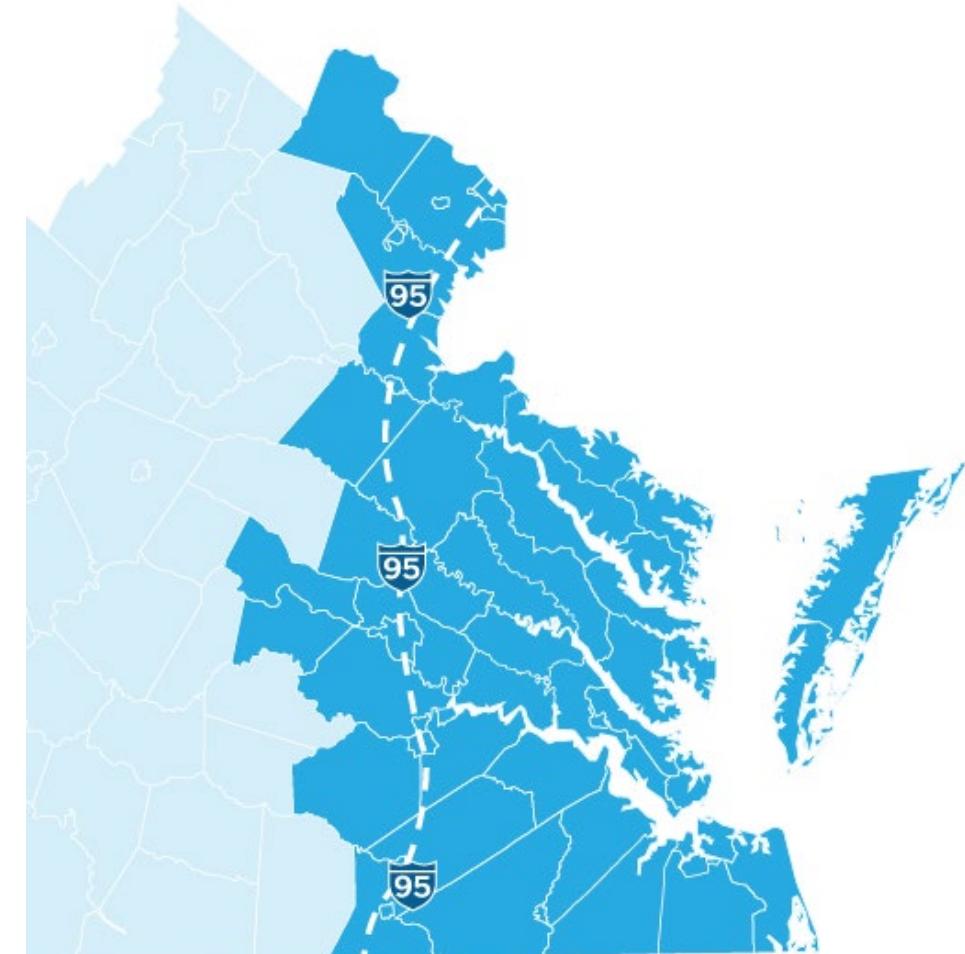


## The Virginia Coastal Resilience Master Plan

A trusted resource to assist government entities in making evidence-based decisions to mitigate severe and repetitive flooding.

- Provides a unified baseline analysis of the threat of increasing flood exposure and impacts.
- Identifies opportunities to prioritize impactful flood resilience solutions.

Despite being called “coastal” the plan addresses all forms of flooding in this region. Nearly six million people, or 70% of the state’s population, call coastal Virginia home.

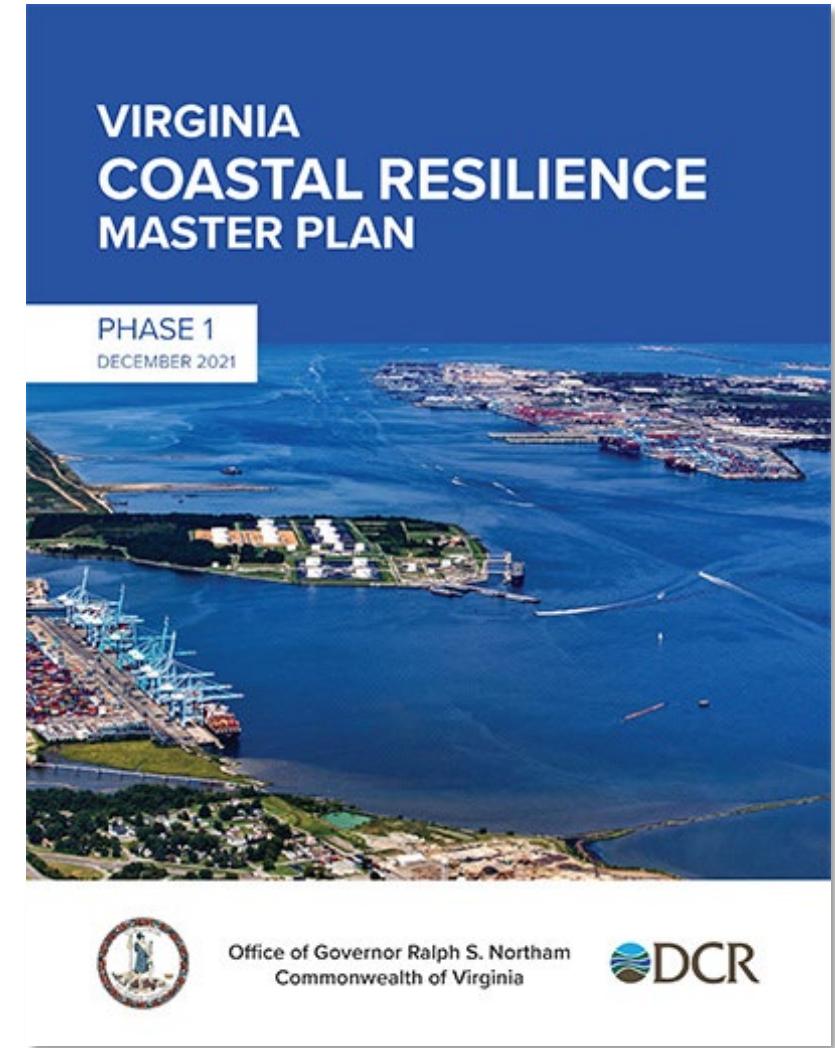


# The Coastal Resilience Master Plan, Phase I

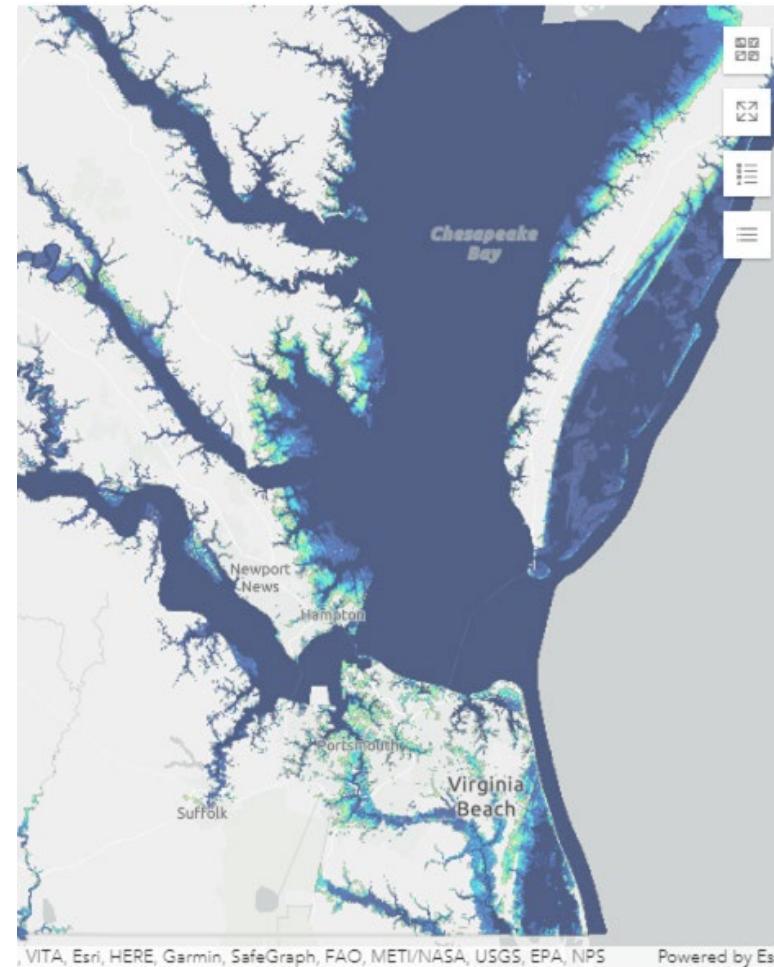
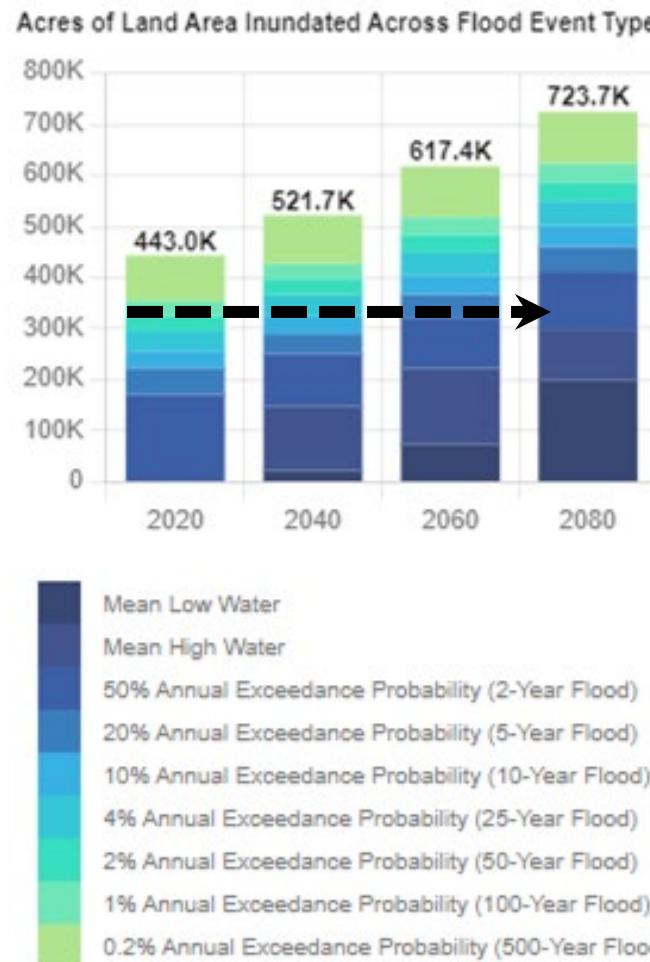
- Developed and released by the Commonwealth in 2021.
- Served as a call to action for coastal Virginia.
- Shows that, without action, rising sea levels and increasingly severe weather threaten our cherished coastal regions' economic, cultural, and environmental resources.
- Developed in a collaborative process with many organizations and stakeholders.

## KEY ELEMENTS OF THE PLAN

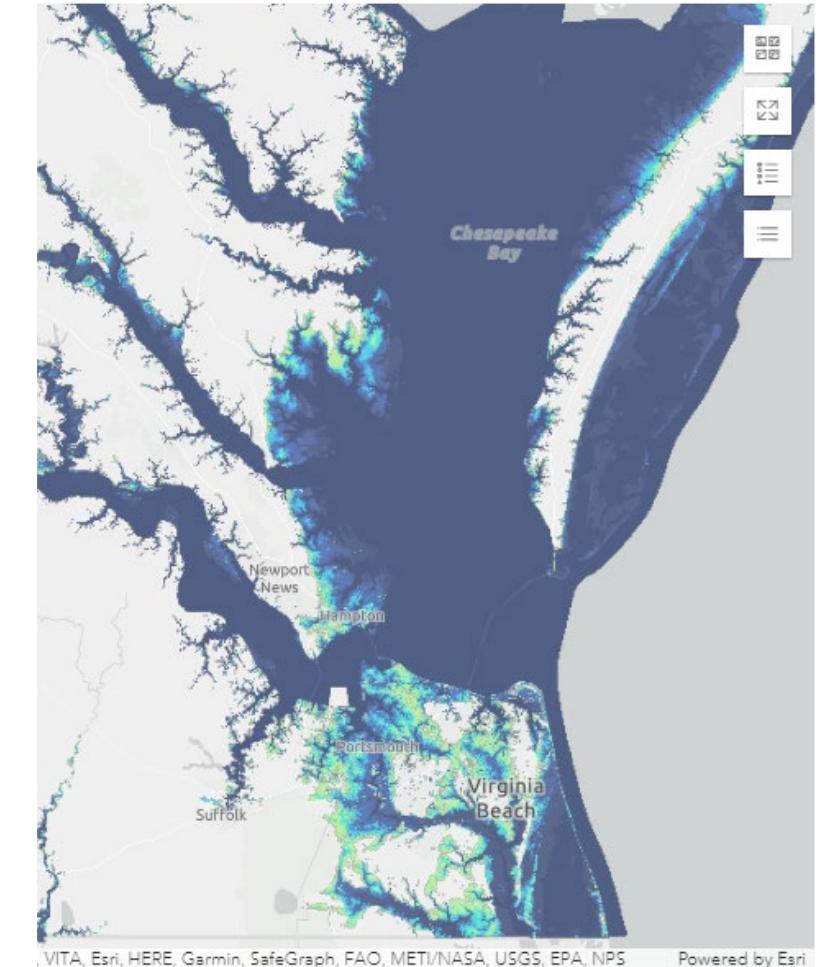
- Current and future land exposure to coastal flooding hazards.
- Impacts of flooding on people and social, natural, and built assets.
- Inventory of locally-driven projects and initiatives that address flood resilience challenges.
- Inventory of grant and loan to assist regions and localities with securing financial resources.



# Findings of the Coastal Resilience Master Plan, Phase I



2020



2080

# Findings of the Coastal Resilience Master Plan, Phase I

Between 2020 and 2080...



the number of **residents** living in homes exposed to major coastal flooding is projected to grow from approximately 360,000 to 943,000, an increase of **160%**.



the number of residential, public, and commercial **buildings** exposed to an extreme coastal flood is projected to increase by almost **150%**, from 140,000 to 340,000, while annualized flood damages increase by over **930%** from \$550 million to \$5.7 billion.

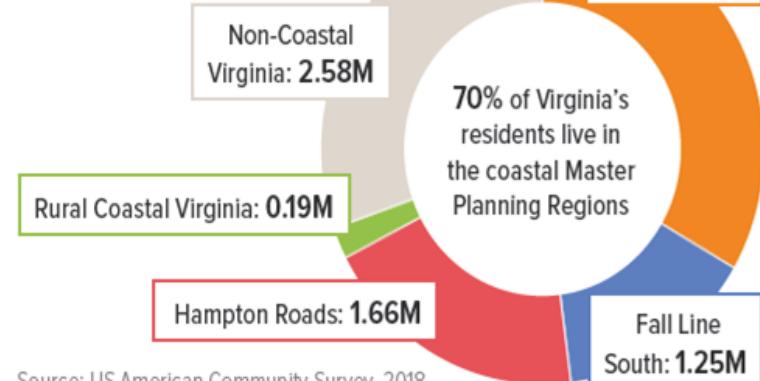


the number of miles of **roadways** exposed to chronic coastal flooding is projected to increase from approximately 500 to nearly 2,800 miles, an increase of **460%**.



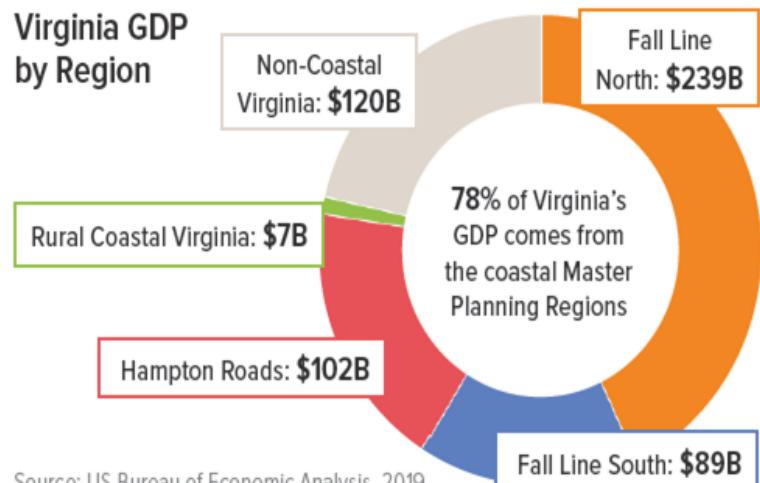
an estimated 170,000 acres, or **89% of existing tidal wetlands** and 3,800 acres, or **38% of existing dunes and beaches** may be permanently inundated, effectively lost to open water.

Virginia Population by Region



Source: US American Community Survey, 2018

Virginia GDP by Region



Source: US Bureau of Economic Analysis, 2019

# Overview of the Coastal Resilience Master Plan

*Phase II Update, Products, and Findings*

# Coastal Resilience Master Plan, Phase II

## OUR CONSULTANT TEAM

Critical to the plan's development is the work of consulting consortium teams led by the following three companies:



## INNOVATIONS OF THE PLAN

- Provide a picture of current and future rainfall-driven flooding based on climate forecasts.
- Forecast regional and local economic impacts of flooding. For example, the tax base implications of increasing flooding.
- Estimate, in dollar terms, how flooding is likely to impact the ability of natural resources to provide us with ecosystem services.
- Emphasize the development of recommendations of the Coastal Resilience Technical Advisory Committee for identifying next steps for flood resilience in coastal Virginia.

The Coastal Resilience Technical Advisory Committee (“TAC”) is a public body established by Code to advise and support the plan’s development and implementation. More than 35 organizations with relevant knowledge and a stake in the plan’s outcomes meet quarterly to receive plan updates and provide DCR with vital advice on planning decisions.

# Enhanced Outreach and Engagement for a Better Plan

## OUR GOALS FOR CONNECTING WITH STAKEHOLDERS

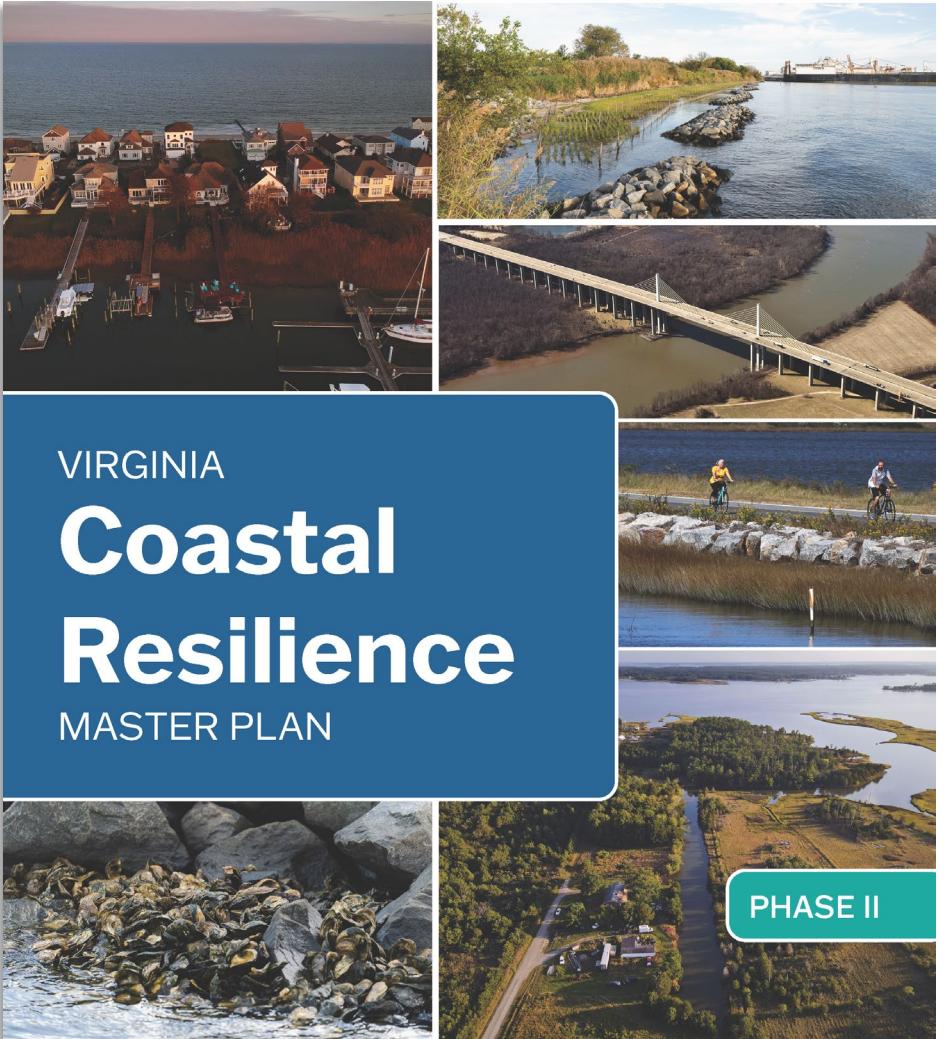
- Understand how our end-users would like to use the plan and associated products.
- Understand on-the-ground experiences with flooding to be able to present them alongside our modeled findings.
- Understand solutions to address flood risk and present them in the plan.
- Drive awareness of coastal flooding and encourage **whole community** action toward coastal flood resilience.



# Our Plan Products

The screenshot shows the homepage of the Virginia Coastal Resilience Master Plan Web Explorer. At the top, there's a navigation bar with links for Home, Hazards & Impacts, Projects & Initiatives, Funding Opportunities, and Information & Help. The main content area features a large image of a coastal town at sunset. A central box contains the title "Virginia Coastal Resilience Master Plan Web Explorer" and a brief description of the tool's purpose: "The Coastal Resilience Web Explorer is an interactive tool and living database for understanding impacts and ongoing efforts to address flooding in Coastal Virginia. Explore the plans data products through the flood hazards & impacts tab; projects & initiatives tab, and funding opportunities tab. Direct access to this data is available through the Coastal Resilience Open Data Portal. Additional data is available upon request." Below this, a section titled "Navigating the Tool" provides four categories: "Hazards & Impacts" (with a house icon), "Projects & Initiatives" (with a blueprint icon), "Funding Opportunities" (with a dollar sign icon), and "Information & Help" (with a question mark icon). Each category has a brief description and a "LEARN MORE" button.

## Coastal Resilience Web Explorer Conceptual Draft Landing Page



Draft Plan Cover Page



December 2024

# Coastal Resilience Master Plan, Phase II: Plan Components

## FLOODING IN COASTAL VIRGINIA

### FLOOD HAZARDS

Where is flooding likely to occur in the future?

### FLOOD IMPACTS

What impacts is flooding likely to cause in the future?

## ADVANCING FLOOD RESILIENCE

### FLOOD RESILIENCE SOLUTIONS

What projects and initiatives are underway to address flooding?

### FINANCING FLOOD RESILIENCE

How much money is needed for flood resilience? What funding resources exist?

### RECOMMENDATIONS OF THE COASTAL RESILIENCE TECHNICAL ADVISORY COMMITTEE

What actions should the state and other responsible parties take to continue addressing flooding in coastal Virginia over the next four years?

### Major Sources of Flooding

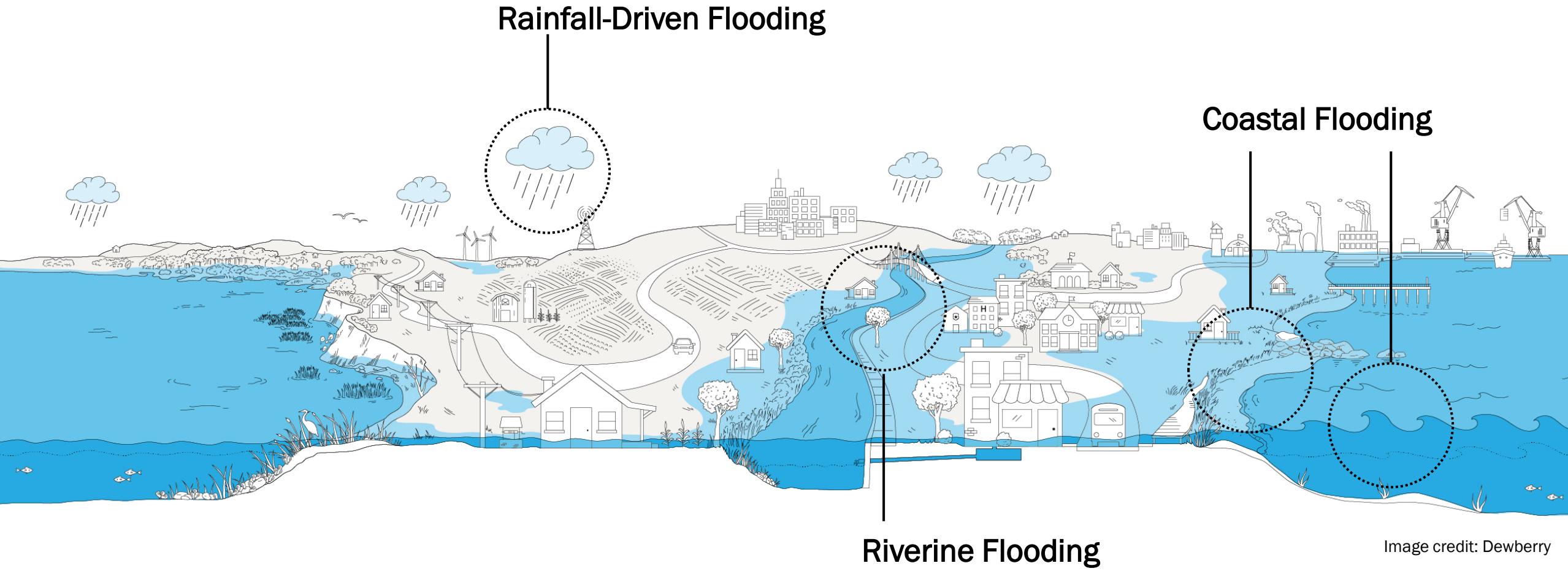
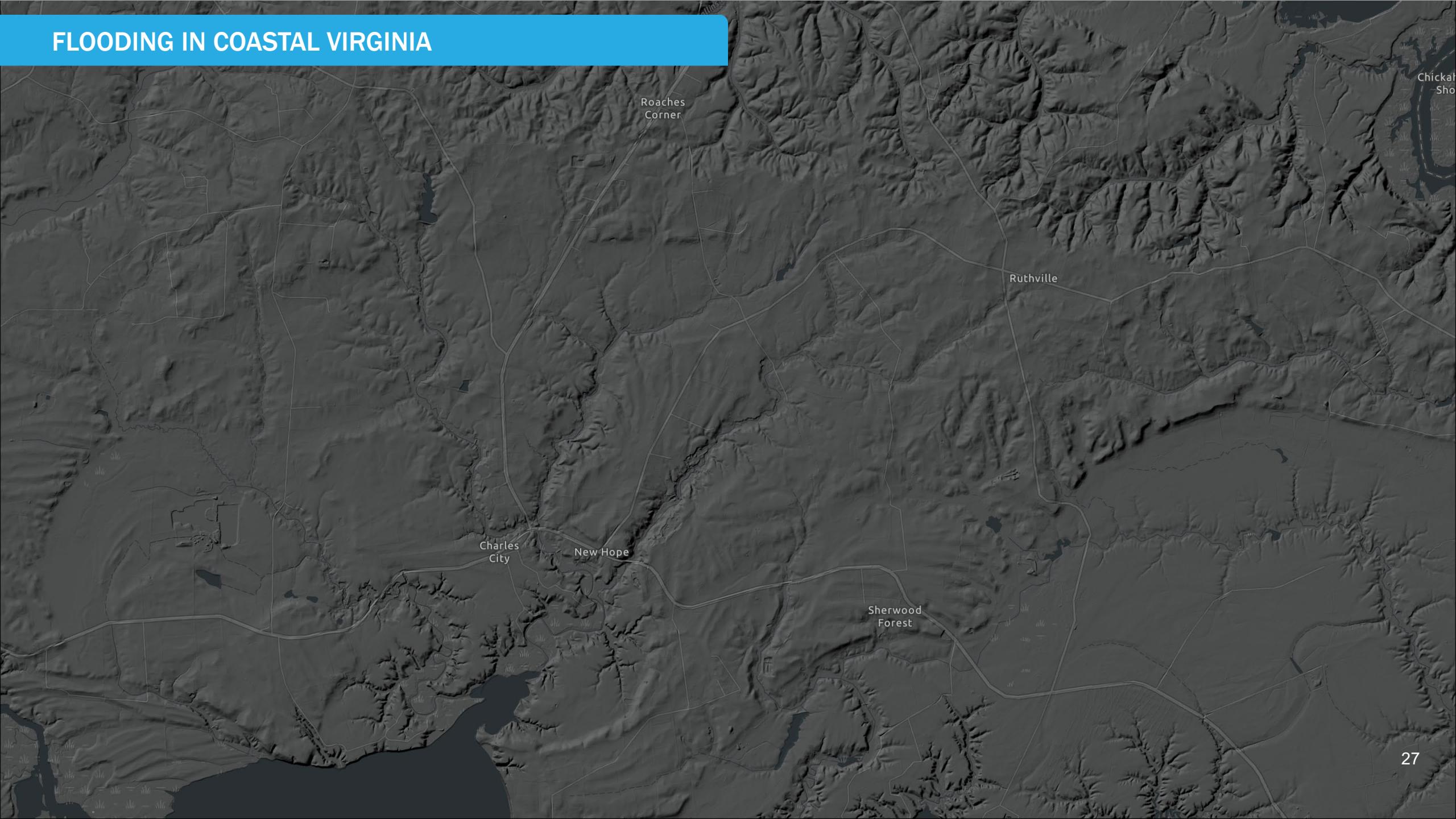


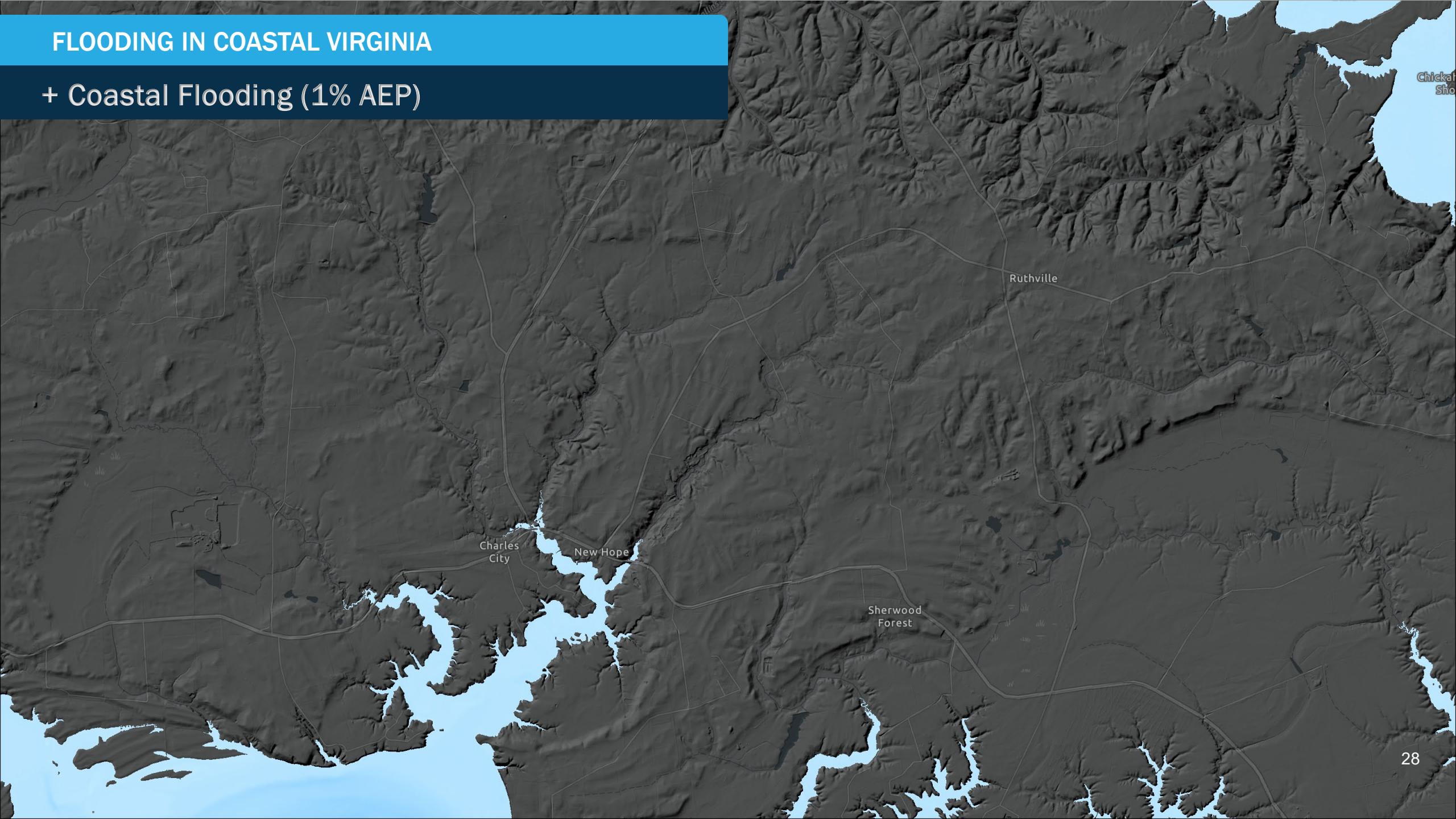
Image credit: Dewberry

## FLOODING IN COASTAL VIRGINIA



## FLOODING IN COASTAL VIRGINIA

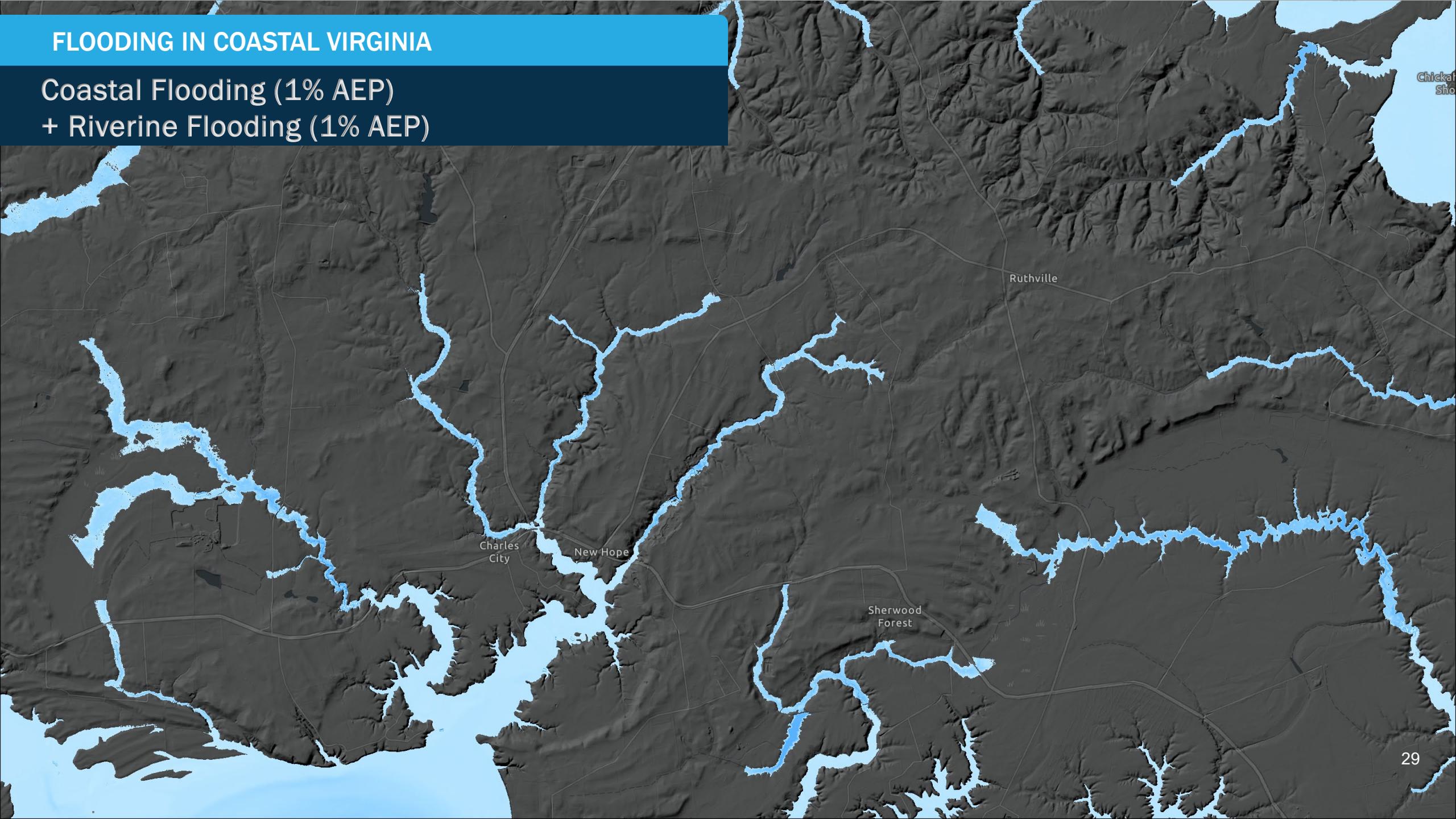
+ Coastal Flooding (1% AEP)



## FLOODING IN COASTAL VIRGINIA

Coastal Flooding (1% AEP)

+ Riverine Flooding (1% AEP)

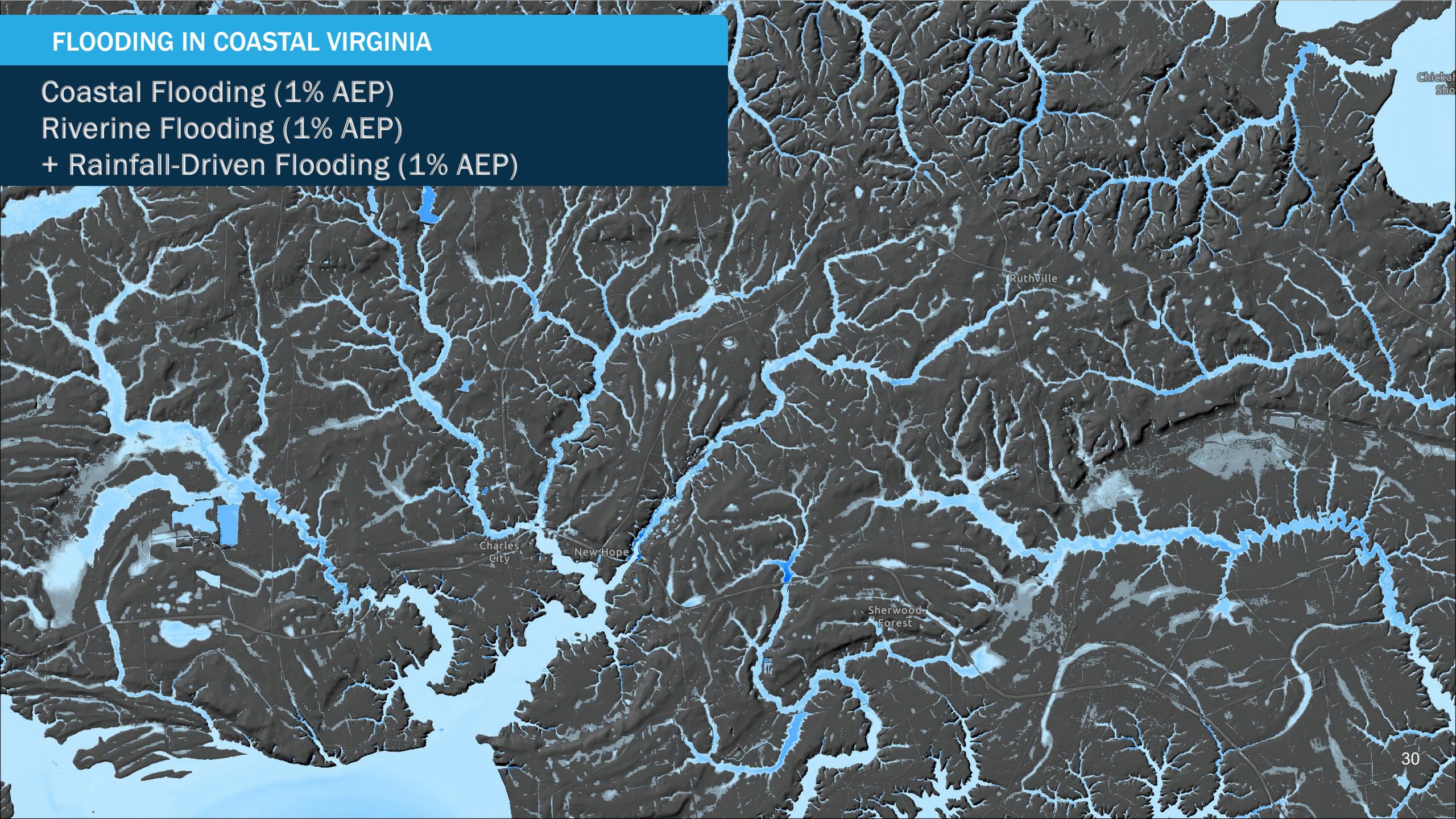


# FLOODING IN COASTAL VIRGINIA

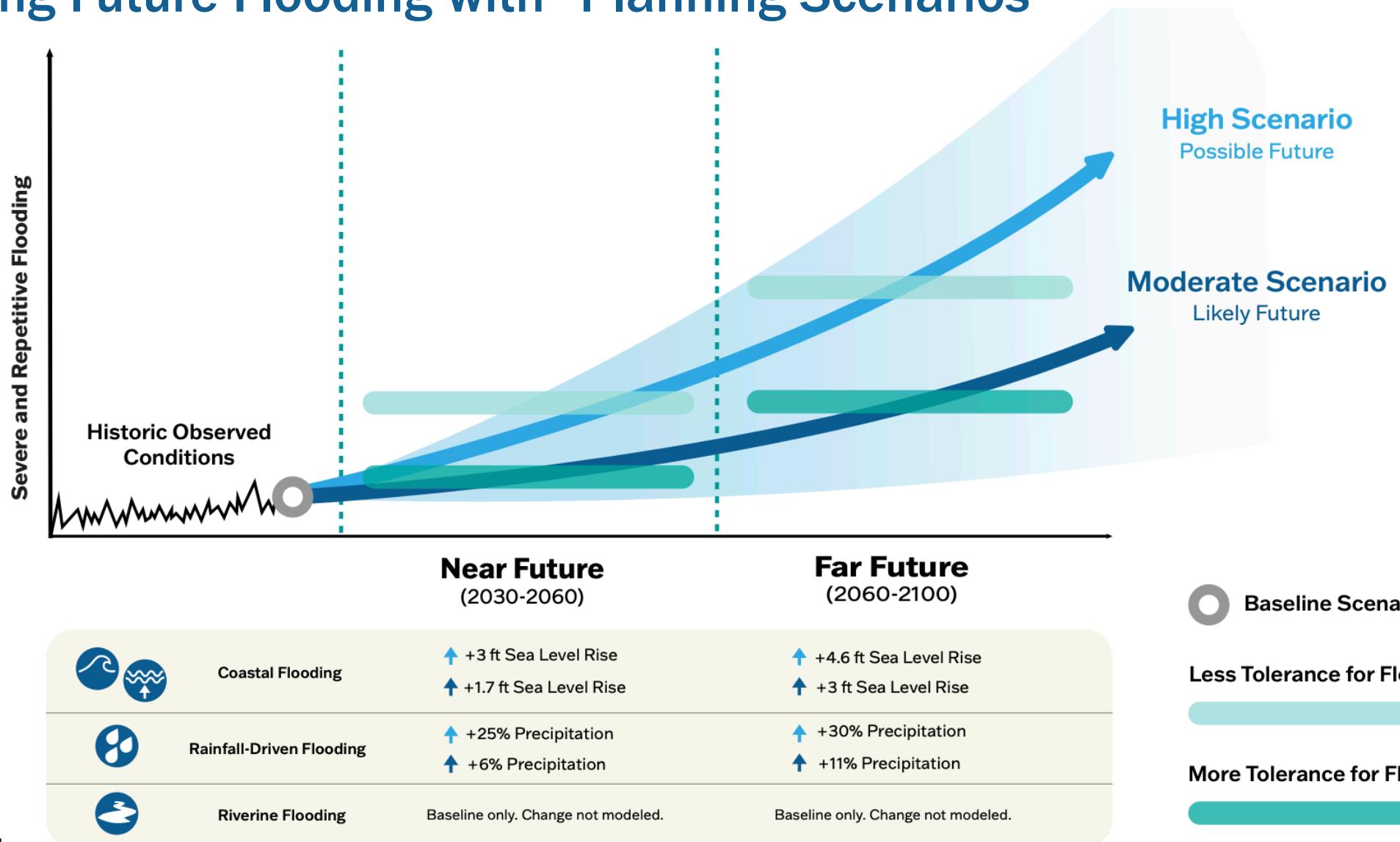
Coastal Flooding (1% AEP)

Riverine Flooding (1% AEP)

+ Rainfall-Driven Flooding (1% AEP)



# Forecasting Future Flooding with “Planning Scenarios”



### Understanding Flood Impacts

#### Multiple Flood Hazard Types



Coastal



Rainfall



Riverine

#### Multiple Planning Scenarios



#### Multiple Asset Types



Community Resources



Built Infrastructure



Human Infrastructure



Natural Infrastructure

### Participant Poll – Flooding Impacts

The screenshot shows a poll creation interface. At the top, there are three colored dots (red, yellow, green) and the text 'Polls/Quizzes'. Below this, a navigation bar shows 'Polls/Quizzes > Create Poll'. The main area is titled 'Untitled Poll 1'. It contains a question box labeled 'Untitled Question' with a dropdown menu icon. Underneath is a choice box for 'Choice 1' (radio button selected) and 'Choice 2' (radio button unselected). A '+ Add Choice' button is available. Below these are toggle switches for 'Required' (on), 'Show as dropdown' (off), and 'Create Breakout Rooms' (off). At the bottom of the poll creation box are 'Cancel' and 'Save' buttons.

Please respond to the anonymous poll that appears on your screen

## Example of Flood Impact Information from Phase I

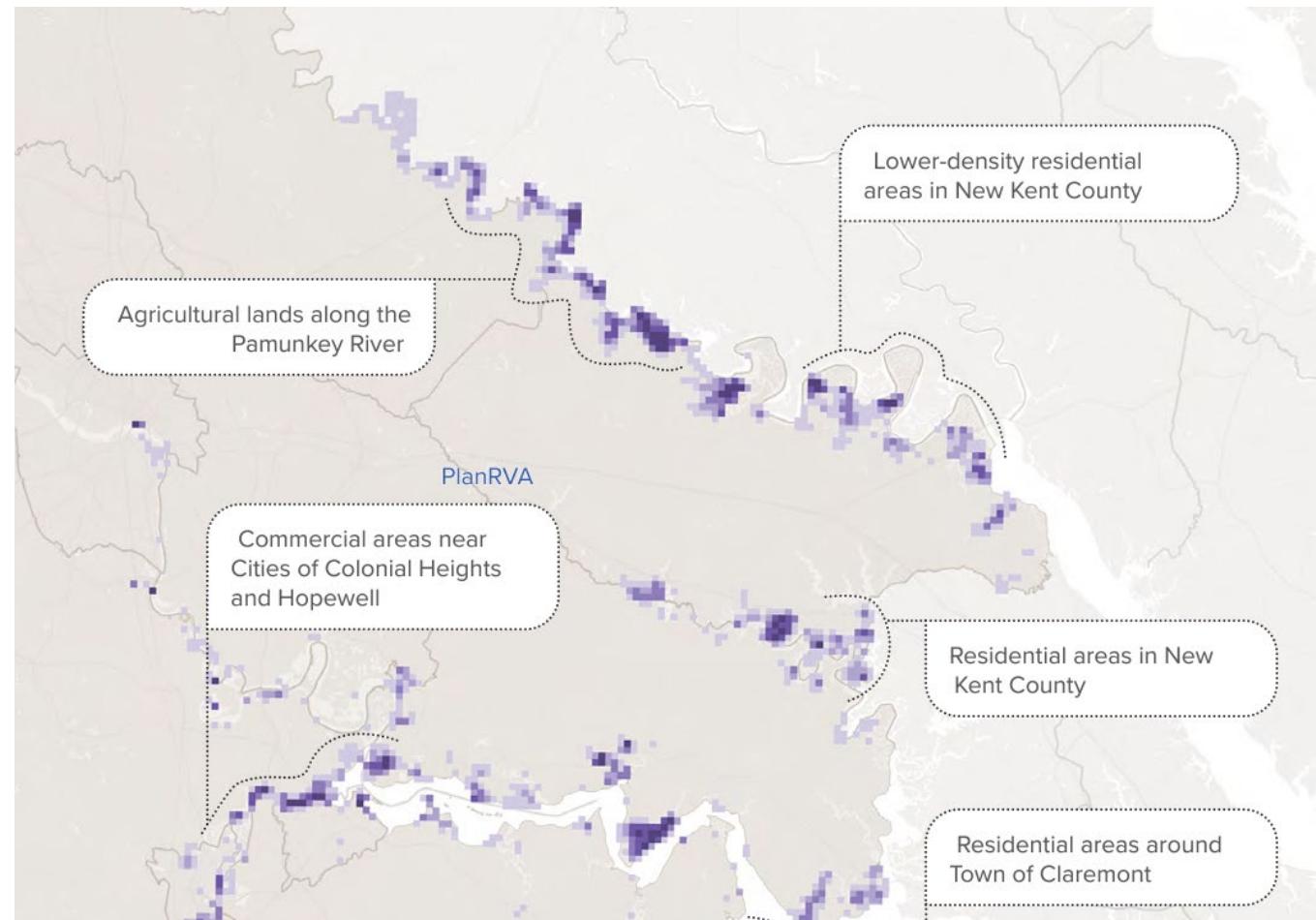
Residential Population Exposed		2020	2080	Change
Crater PDC	High tide	< 5	80	+ 2700%
	Extreme flood	130	530	+ 302%
PlanRVA	High tide	20	500	+ 2495%
	Extreme flood	1,100	2,200	+ 105%

Annualized Structure Losses*		2020	2080	Change
Crater PDC	Residential	\$1.62M	\$7.46M	+ 360%
	Non-Residential	\$0.69M	\$6.00M	+ 765%
PlanRVA	Residential	\$3.30M	\$14.2M	+ 331%
	Non-Residential	\$13.0M	\$27.40M	+ 111%

\* Projected average annualized losses due to damages to structures and contents.

Agricultural Land Acres Exposed		2020	2080	Change
Crater PDC	High tide	480	1,300	+ 176%
	Extreme flood	1,500	1,900	+ 23%
PlanRVA	High tide	2,400	4,500	+ 86%
	Extreme flood	5,300	7,500	+ 41%

Differences in asset exposure numbers and percentage changes can be attributed to rounding for presentation. Percentage changes reflect exact exposure numbers.



### Initial Findings from Phase II

#### COASTAL FLOODING

Coastal flooding is expected to increase significantly in some areas of the region in the long-term. The land area likely to be flooded in a 1% annual chance flood is expected to increase from 300,000 acres to more than 635,000 acres under the long-term, moderate scenario.

About 65% of that land area is currently occupied by primarily natural resources or vegetation.

#### RAINFALL-DRIVEN FLOODING

Models show that rainfall-driven flooding may already annually inundate more than 6% of the land area. This area, totaling more than 450,000 acres, is about 85% natural or vegetated.

In the far future, moderate scenario, we expect this annual exposure to increase to about 9% of land area (650,000 acres). Of this 81% is presently natural or vegetated.

#### RIVERINE FLOODING

The plan does not include future-looking forecasts for riverine flooding.

During the baseline scenario major flood event, 7.4% of land area in the coastal region – more than 547,000 acres – is exposed to riverine flooding.

Almost 80% of that area is primarily natural or vegetated.



### Initial Findings from Phase II on BIED Sectors

- The number of buildings impacted annually by coastal flooding is projected to increase from less than 1% in the present day to over 7% in the far future scenario.
- In the present-day scenario, **about 6% of all built infrastructure assets** reviewed for this plan are exposed to rainfall-driven flooding annually. In the far future scenario, **rainfall-driven flood events** are anticipated to impact **8% of built infrastructure assets** annually on average.
- On average, **every \$1 of flood-related damage reduces industry output by approximately \$1.8 dollars.**
- In terms of industry output, **the costs associated with coastal flooding rise from \$7.5 billion** in the present day **to as much as \$45 billion** in the far future without mitigating actions.
- Presently, **three Planning District Commissions** (Hampton Roads PDC, Northern Virginia Regional Commission, and PlanRVA) account for approximately **95% of all industry output losses associated with rainfall-driven flooding.**

# How to use the Flood Hazard Impact Assessment Findings

- Use the Coastal Resilience Web Explorer (CRWE) to find your site location and assess your flood risk.
- Review the potential financial and economic impact of flooding in your community.
- Make informed decisions on site selection and expansion planning.
- Better understand community flooding context for more informed engagement.
- Inspire businesses and individuals to understand flood risk and take resilience action.

Insert screenshot of updated CRWE tool for reference – if available from DCR.

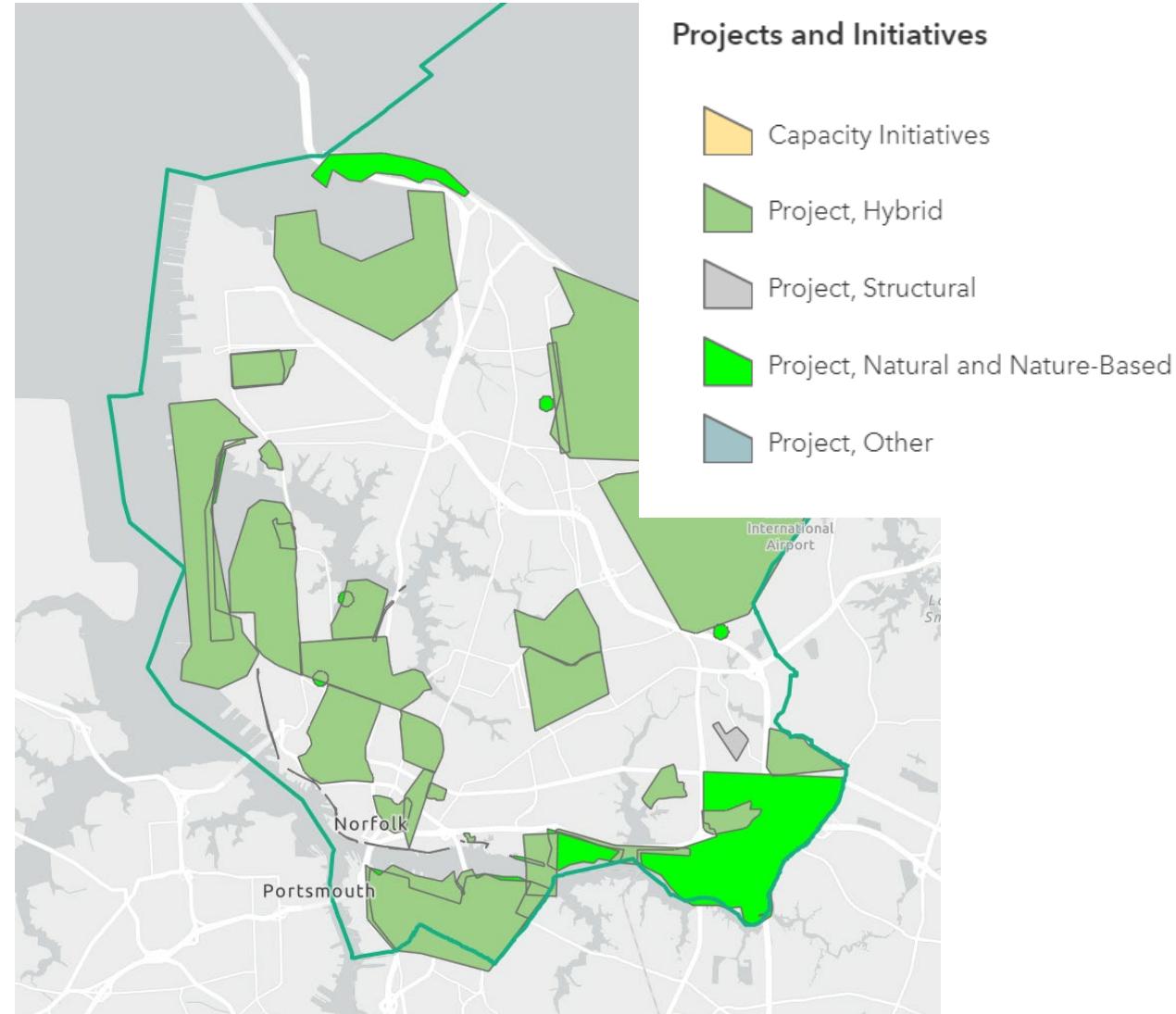
## Projects and Initiatives

Programs, studies, plans or projects located in coastal Virginia which are led or supported by the government. They have a primary purpose to address the impacts of flooding on people, the environment or the economy.

The Coastal Resilience Web Explorer serves as the “living” inventory of these projects and initiatives.

### How to Leverage the Projects and Initiatives Inventory:

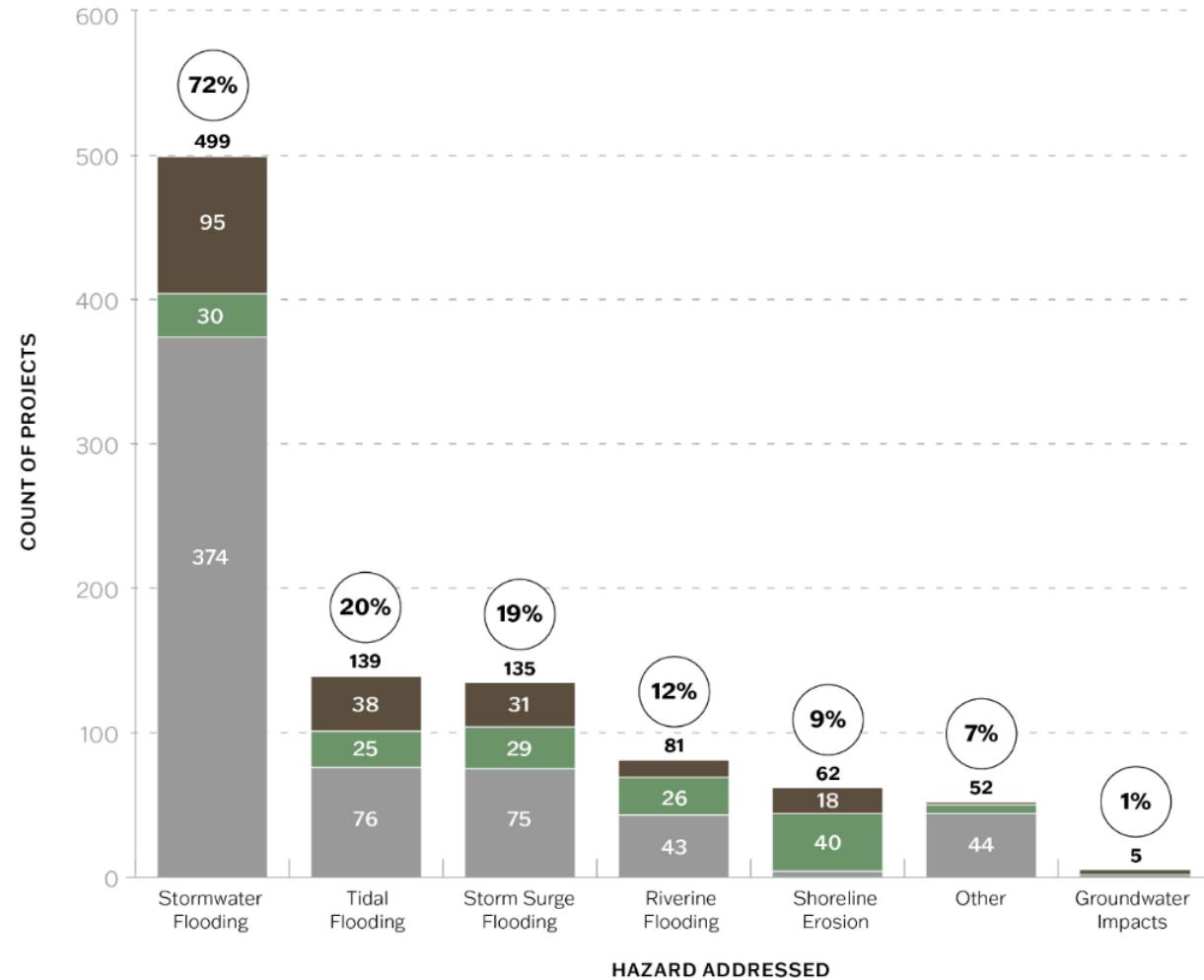
- Better understand planned and ongoing resilience projects and initiatives in your local community.
- Understand where flooding is occurring and what localities are doing to mitigate it.
- Encourage public and private partnerships to enhance resilience.
  - *EX: A private business owner partners with the local government to develop a stormwater infrastructure improvement project that protects their buildings and the surrounding community.*



## Projects and Initiatives Analysis

Region Name	No. Projects & Initiatives	Project Costs	Initiative Costs	Funding Awarded*
Accomack-Northampton	87	\$43 M+	\$21 M+	\$1.7 M+
Crater	22	\$30M+	\$1 M+	\$8.4 M+
George Washington Regional	37	\$27 M+	\$17 M+	\$97 K+
Hampton Roads	543	\$6.9 B+	\$224 M+	\$93 M+
Middle Peninsula	22	\$1.1 B+	\$419 K+	\$1.9 M+
Northern Neck	7	\$6 M+	\$737 K+	\$183 K+
Northern Virginia	84	\$548 M+	\$304 M+	\$31 M+
Plan RVA	129	\$225 M+	\$930 K+	\$13 M+

\*Funding awarded includes grants provided via the Community Flood Preparedness Fund (2021 – July 2024) and by the Virginia Department of Emergency Management between (2018 – July 2024)



Structural Projects



Nature-Based Projects



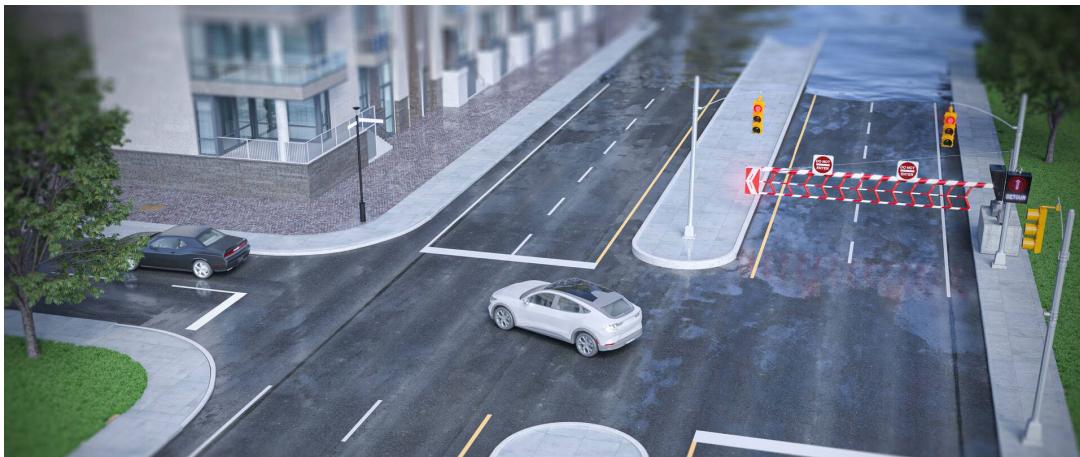
Hybrid Projects

### Example Flood Resilience Projects

#### FLOODED ROADWAY TRAFFIC GATE

**Project Type:** Structural/Flood Risk Reduction

Prince William County implemented a tool that tracks and monitors real-time flood conditions. Through this system, the roads that are unsuitable for travel are closed. More high-water detection equipment will be installed in the most vulnerable areas in the County. The system includes rainfall and stream summaries, display thresholds, and alarms to support public safety and situational awareness.



Flooded road gate system example (Source: Versilis)

#### KENT GARDENS NEIGHBORHOOD STORMWATER IMPROVEMENT

**Project Type:** Community Infrastructure/Drainage Improvement

This stormwater improvement project in Fairfax County aims to assess a concrete channel network impacting the Kent Gardens Neighborhood. This project has various goals including targets for localized flooding, addressing public safety, and erosion, and community collaboration to develop and maintain solutions.



A concrete channel near Kent Gardens (Source: Fairfax County)

# Example Flood Resilience Initiatives

### ONANCOCK HISTORIC WHARF PRESERVATION AND PROTECTION PLAN

Action Owner: Town of Onancock

The Town of Onancock and the County of Accomack are working to develop a plan to guide resilience improvements and adaptation options to the historic wharf that faces lunar tide flood events. The area is both an active and an economic driver in recreation.



Onancock Historic Wharf and Marina (Source: Water Way Guide)

### THE RAFT: MAINTAINING PROGRESS IN COASTAL VIRGINIA

Action Owner: University of Virginia, Old Dominion University, Virginia Tech, and community partners

The Resilience Adaptation Feasibility Tool (RAFT), developed by an interdisciplinary academic collaborative aids coastal communities in Virginia towards resilience improvement and targeting hazards created by coastal storms. The RAFT considers both economic and social factors in the assessment process.



Flooding in a RAFT target area (Source: University of Virginia)

### Participant Poll – Resilience Actions

The screenshot shows a poll creation interface. At the top, there are three colored dots (red, yellow, green) and the text 'Polls/Quizzes'. Below this, a breadcrumb navigation shows 'Polls/Quizzes > Create Poll'. The main area is titled 'Untitled Poll 1'. It contains a question box labeled 'Untitled Question' with a radio button icon. Below it is a choice box labeled 'Choice 1' with a radio button icon, which is highlighted with a blue border. Another choice box labeled 'Choice 2' with a radio button icon is below it. A button '+ Add Choice' is available. Below the choice boxes are three toggle switches: 'Required' (off), 'Show as dropdown' (off), and 'Create Breakout Rooms' (off). There are also icons for a camera and three dots. At the bottom, there is a '+ Add Question' button, a 'Cancel' button, and a 'Save' button.

Please respond to the anonymous poll that appears on your screen

# Recommendations of the Coastal Resilience Technical Advisory Committee

- Each subcommittee of the TAC is collaboratively developing recommendations to improve mitigation of severe and repetitive flooding in the coastal region.
- The Committee members will vote on the highest priority recommendations at their final meeting on November 13, 2024.
- DCR's Office of Resilience Planning will develop a strategy for adaptively implementing the plan after its release, to include a strategy for advancing the final priority recommendations.

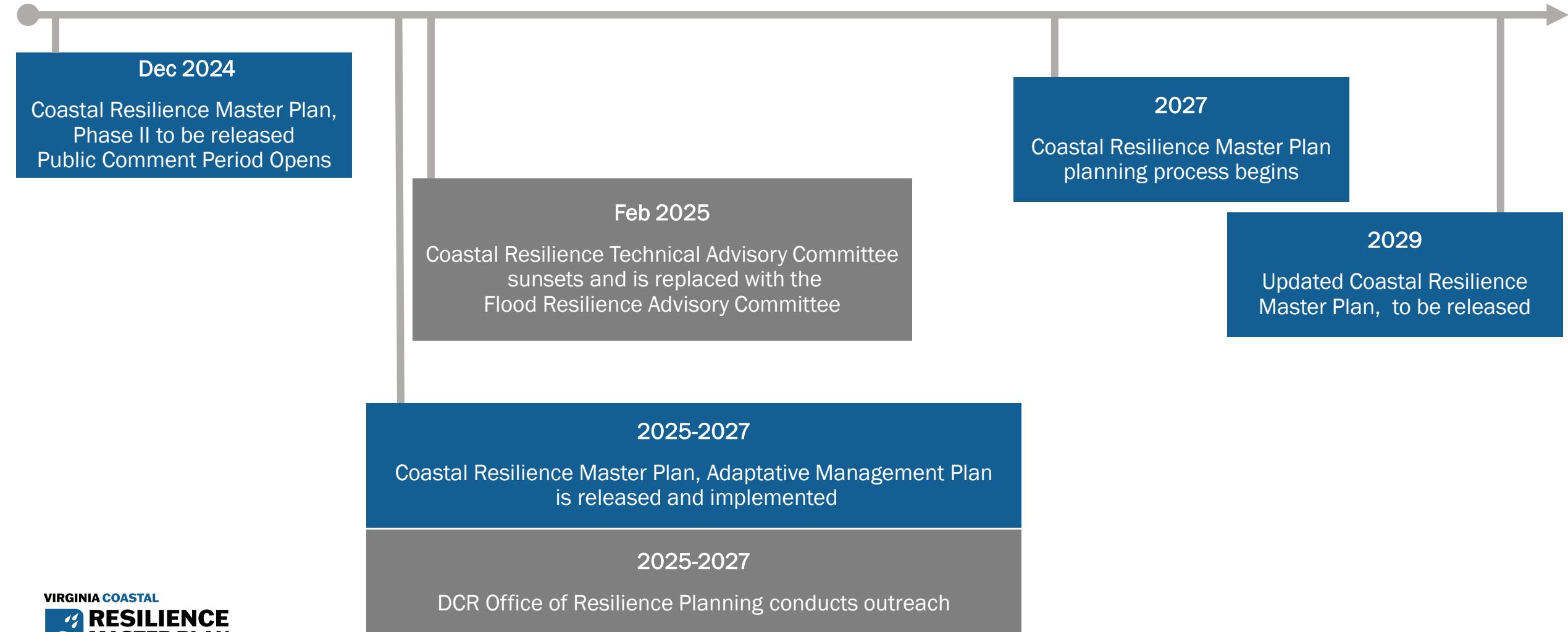
### EXAMPLE ILLUSTRATIVE RECOMMENDATION

*The DCR Office of Resilience Planning should develop and maintain a comprehensive list of available funding resources which can be leveraged to sustainably support uptake and implementation of the Coastal Resilience Master Plan, Phase II.*



# Coastal Resilience Master Planning in Virginia, Looking Forward

This timeline shows major milestones in flood resilience planning for coastal Virginia over the next 5-year planning cycle.



# Stay Involved in the Plan

## ATTEND OUR NEXT ROUND OF WEBINARS

- Two more public webinars coming when the plan is released. (Anticipated December 2024)
- Receive updates on the final plan and information about public comment.

## PARTICIPATE IN PUBLIC COMMENT

- Provide your thoughts on the plan and ideas for improvement.
- Plan will be posted to Virginia Town Hall for a 45-day public comment period.

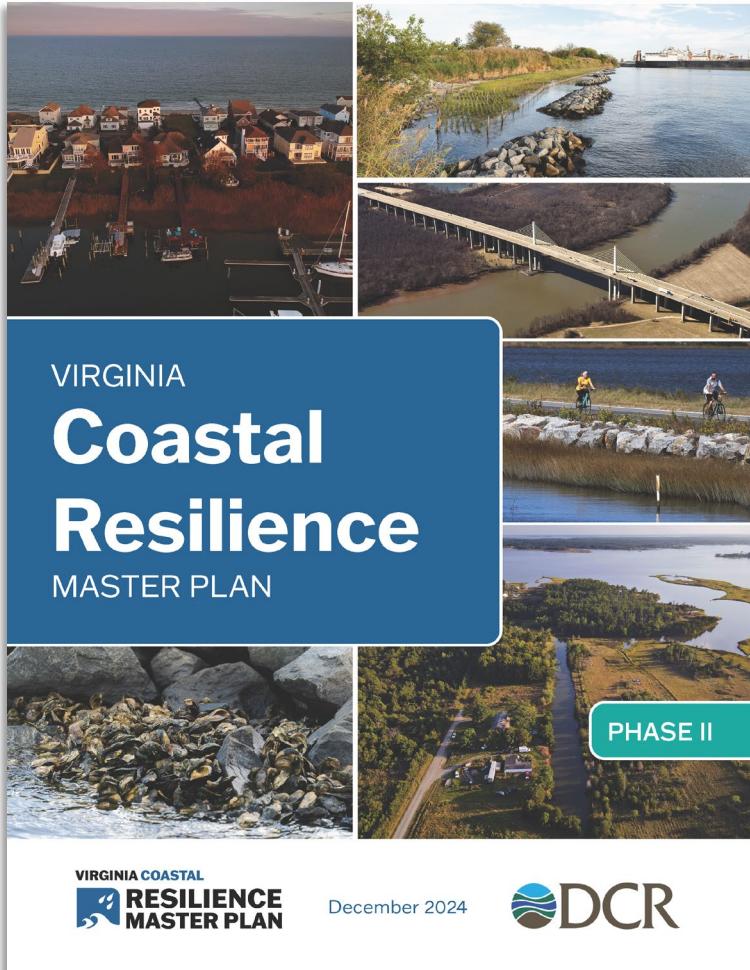
## SHARE YOUR FLOOD STORY

- Visit DCR's web app to submit photos and info about your experiences with flooding to help inform our plans.



<http://www.dcr.virginia.gov/floodstory>

# Access the Plan



The image shows the front cover of the Virginia Coastal Resilience Master Plan document. It features a blue header with the title "VIRGINIA Coastal Resilience MASTER PLAN". Below the header are four small aerial photographs: a coastal town, a rocky shoreline, a bridge over water, and a person riding a bike on a path. A green button labeled "PHASE II" is positioned in the bottom right corner. At the bottom left is the "VIRGINIA COASTAL RESILIENCE MASTER PLAN" logo, and at the bottom right is the "DCR" logo.

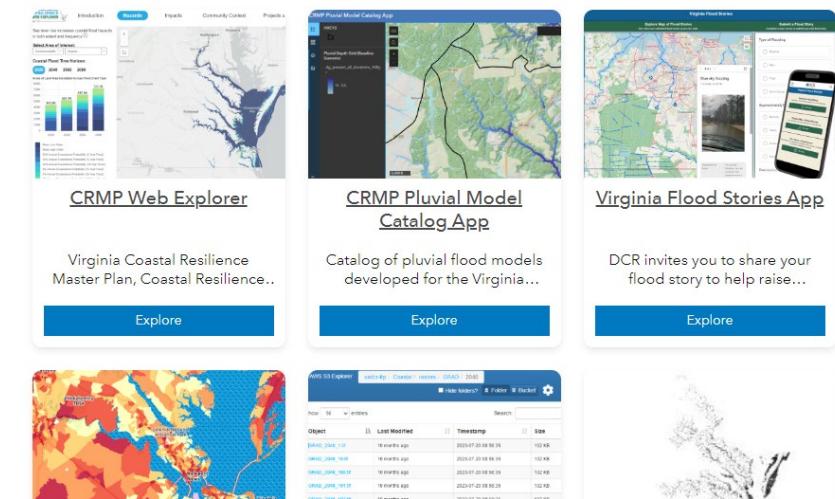
## PDF PLAN DOCUMENT



The image displays the Virginia Coastal Resilience Master Plan Web Explorer interface. The top navigation bar includes links for Home, Hazards & Impacts, Projects & Initiatives, Funding Opportunities, and Information & Help. The main content area features a sunset background and the DCR logo. A central box describes the tool as an interactive database for understanding coastal flooding impacts and resilience projects. Below this are sections for "Hazards & Impacts", "Projects & Initiatives", "Funding Opportunities", and "Information & Help".

## COASTAL RESILIENCE WEB EXPLORER

 **Virginia Coastal Resilience Master Plan, Open Data Portal**



The image shows the Virginia Coastal Resilience Master Plan Open Data Portal. It highlights several applications: the CRMP Web Explorer (a map showing flood hazard areas), the CRMP Pluvial Model Catalog App (a map of pluvial flood models), the Virginia Flood Stories App (a map with a phone icon), and the DCR invites you to share your flood story to help raise... app (a map with a phone icon). Each application has a "Explore" button.

## OPEN DATA PORTAL

# Thank you!



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**Send us an Email**

[flood.resilience@dcr.virginia.gov](mailto:flood.resilience@dcr.virginia.gov)



# Questions

# Feedback Survey