

Coastal Resilience Master Plan Phase II

Local Government Engagement Meeting

DCR Office of Resilience Planning

June 26, 2024



Today's Objectives

1. Provide an overview of the upcoming Coastal Resilience Master Plan (CRMP) Phase II and associated products and tools.
2. Get your feedback to help ensure the Phase II products and tools are accessible and useful.
3. Understand your priorities for addressing flood hazards and impacts in the region.
4. Ensure DCR has accurate information about your projects and initiatives to address flooding to include in the plan.

Today's Agenda (2 hours)

- Introductions
- CRMP Phase II Flood Hazards and Impacts Products
 - Presentation, Q&A
 - Facilitated discussion to gather input and feedback
- CRMP Phase II Projects, Initiatives and Funding Products
 - Presentation, Q&A
 - Facilitated discussion to gather input and feedback
- More Opportunities to be Involved

Why Your Participation Matters

The CRMP Phase II applies to each locality in the eight easternmost PDCs; it covers **all types of flooding**, not just coastal.

Participating in the CRMP Phase II provides an opportunity to:

- **Showcase your locality's resilience priorities and accomplishments** in an adopted state plan.
- Provide additional evidence to justify projects when applying for **grant and loan funding opportunities**.
- Help create an **accurate record of flood resilience funding needs**.
- Gain enrichment through **regional collaboration and knowledge sharing**.

Introductions of Locality Members

Tell us your:

- Name
- Locality
- Role
- What primary flooding challenges does your locality face?

Overview of Phase II of the CRMP



Office of Resilience Planning

Developing State Plans

- Coastal Resilience Master Plan
- Virginia Flood Protection Master Plan

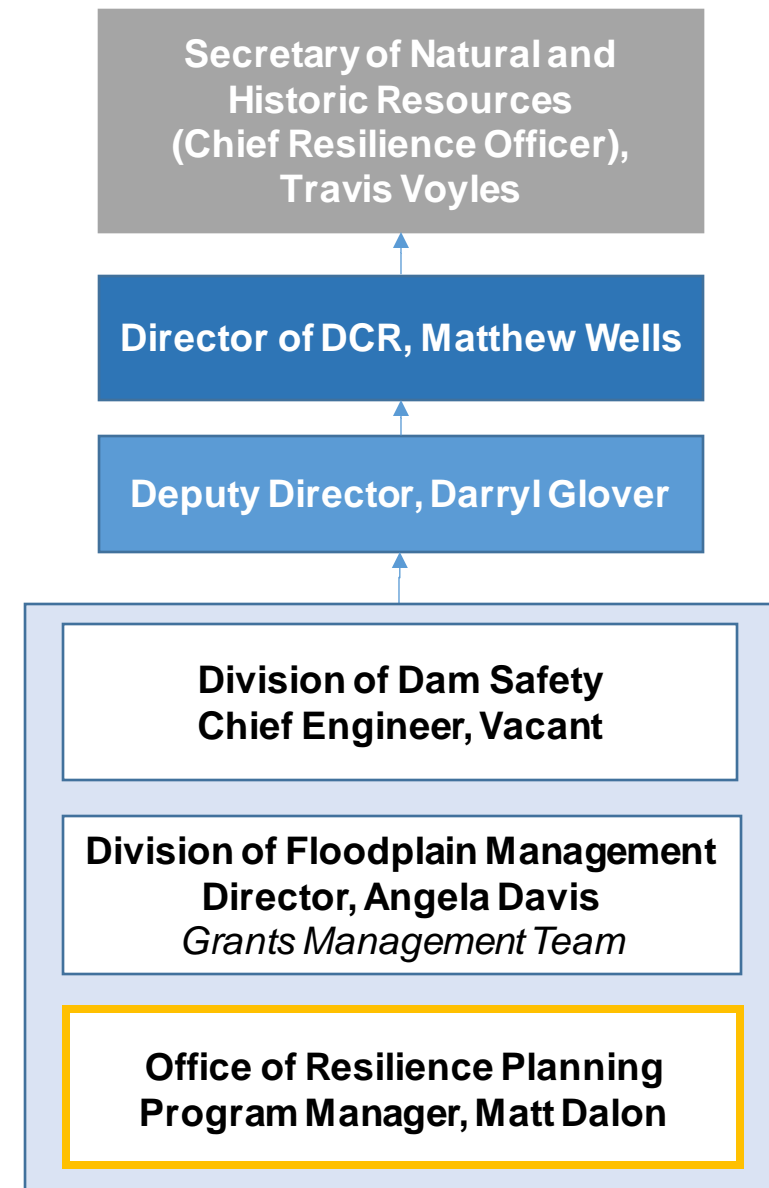
Coordinating Action

- Annual Flood Preparedness Coordination Meeting
- Technical Advisory Committees

Supplying Data and Information

- Coastal Resilience Web Explorer and Open Data

Conducting Outreach and Engagement



What is the Coastal Resilience Master Plan?

A place-specific resource for mitigating severe and repetitive flooding.

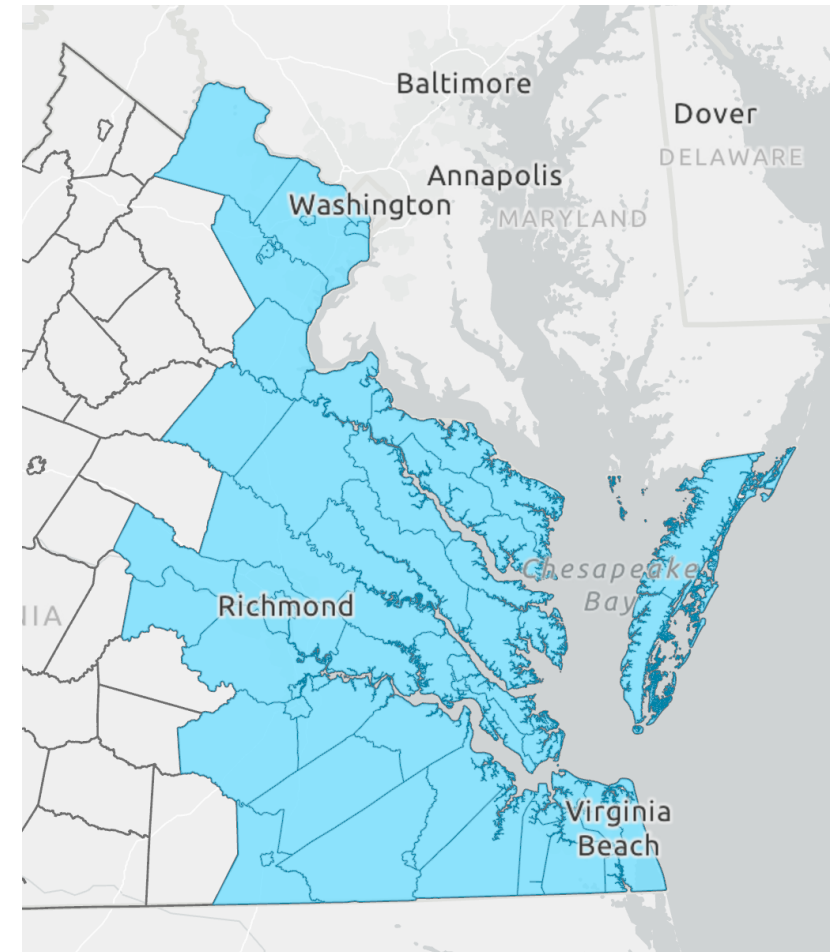
For use by state leaders, PDCs, local governments, and other flood resilience partners and stakeholders, including tribal governments.

Phase I was published in 2021.

The Phase II (updated) plan is due December 2024.

Elements:

1. Flood Hazard Exposure Model
2. Flood Hazard Impact Assessment
3. Planned Resilience Actions
4. Financial Needs for Flood Resilience
5. Recommendations for Future Planning

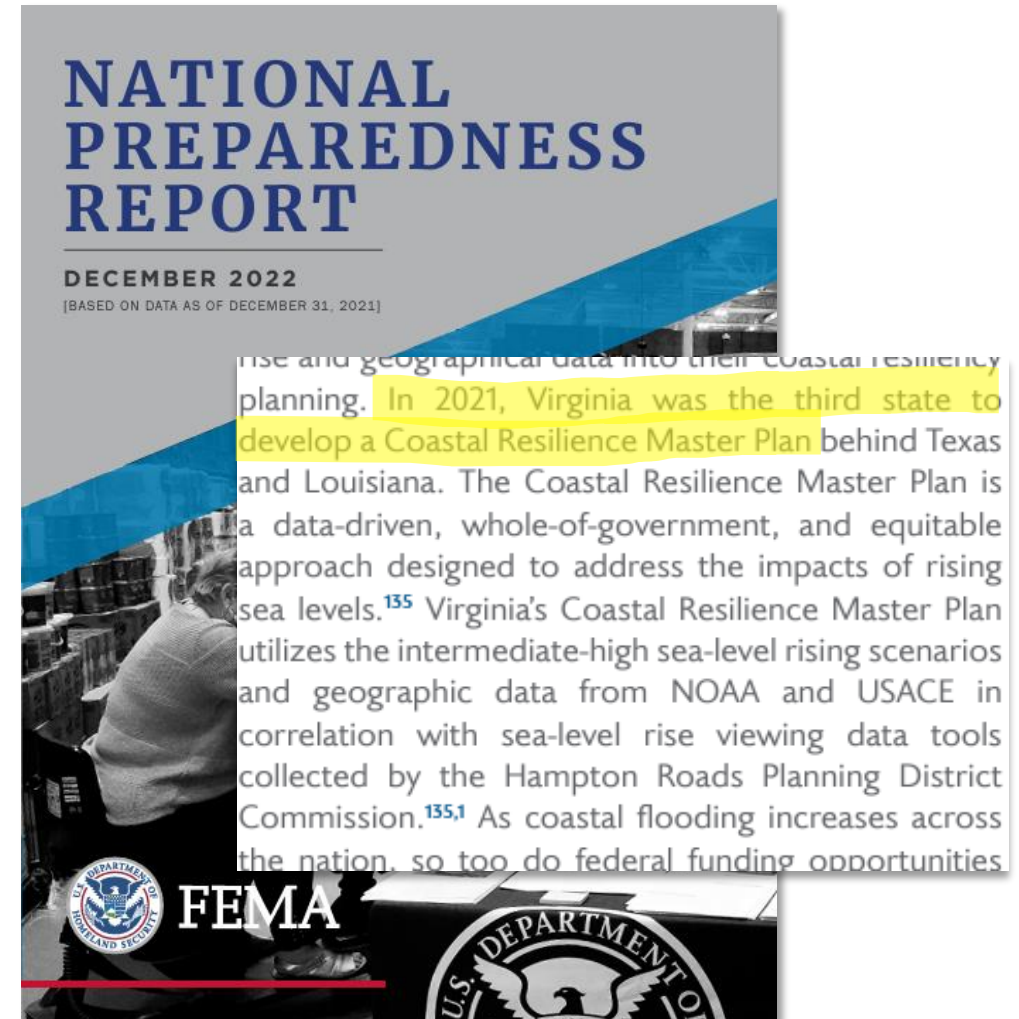


VIRGINIA COASTAL



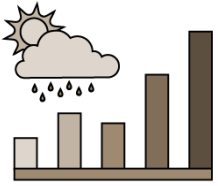
How is the plan used?

- Provides a holistic overview of the flooding challenges and resilience opportunities in the easternmost part of Virginia.
- Used by state agencies, planning district commissions, and local governments as a flood resilience resource to support informed decision making.
- Highly visible document; referenced by federal partners like FEMA.

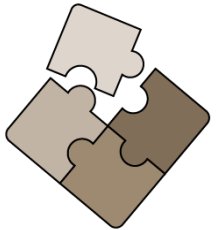


What's new with Phase II?

When released in December 2024, Phase II will:



Identify flood hazard exposure and impacts based on **all forms of flooding**, including coastal, rainfall-driven and riverine flooding.



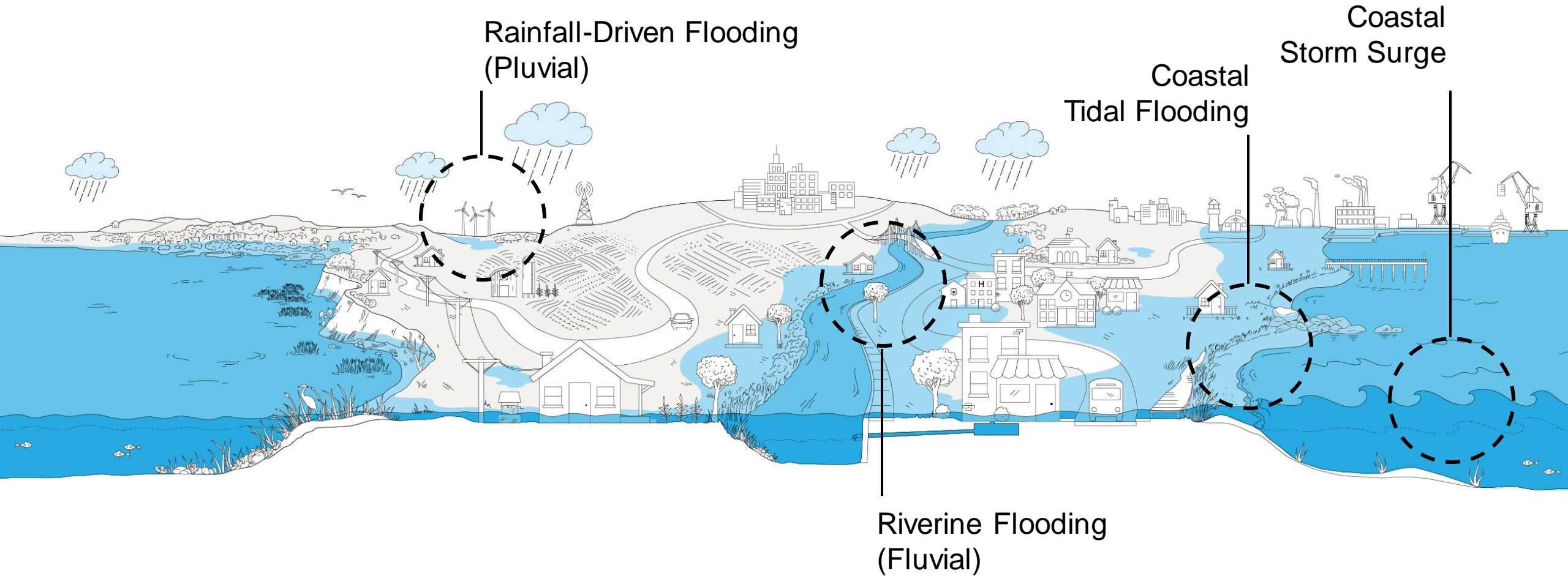
Update the online inventory of **projects, initiatives, and funding** for flood resilience using info from active stakeholders.



Document opportunities for continued improvement in flood hazard data, technical assistance, funding, engagement, and more.

Flood Hazard Exposure

Major Sources of Flooding



Flood Hazard Exposure for CRMP Phase II

Five planning scenarios:

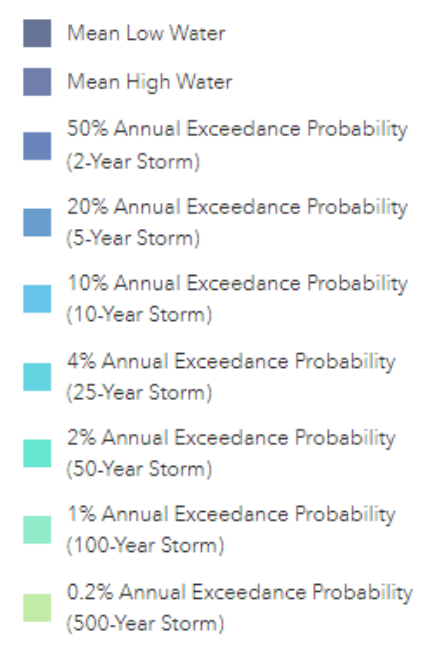
Time Horizon	Reference/ Baseline	Near Future (2030 – 2060)		Far Future (2060 – 2100)	
Risk Tolerance		Moderate	Low	Moderate	Low
Climate Change Projection	-	RCP 4.5 Median	RCP 4.5 90% CI	RCP 4.5 Median	RCP 4.5 90% CI

To compare flood hazard sources, the plan will also identify which flood hazard(s) (coastal, rainfall-driven, or riverine) affect a location.

Three flood hazard sources:

- **Coastal**
 - CRMP Phase I data (NOAA 2017)
- **Rainfall-driven (Pluvial)**
 - CRMP Phase II data (Atlas 14 and MARISA)
- **Riverine (Fluvial)**
 - FEMA Flood Hazard Data

Coastal Flood Hazard Data

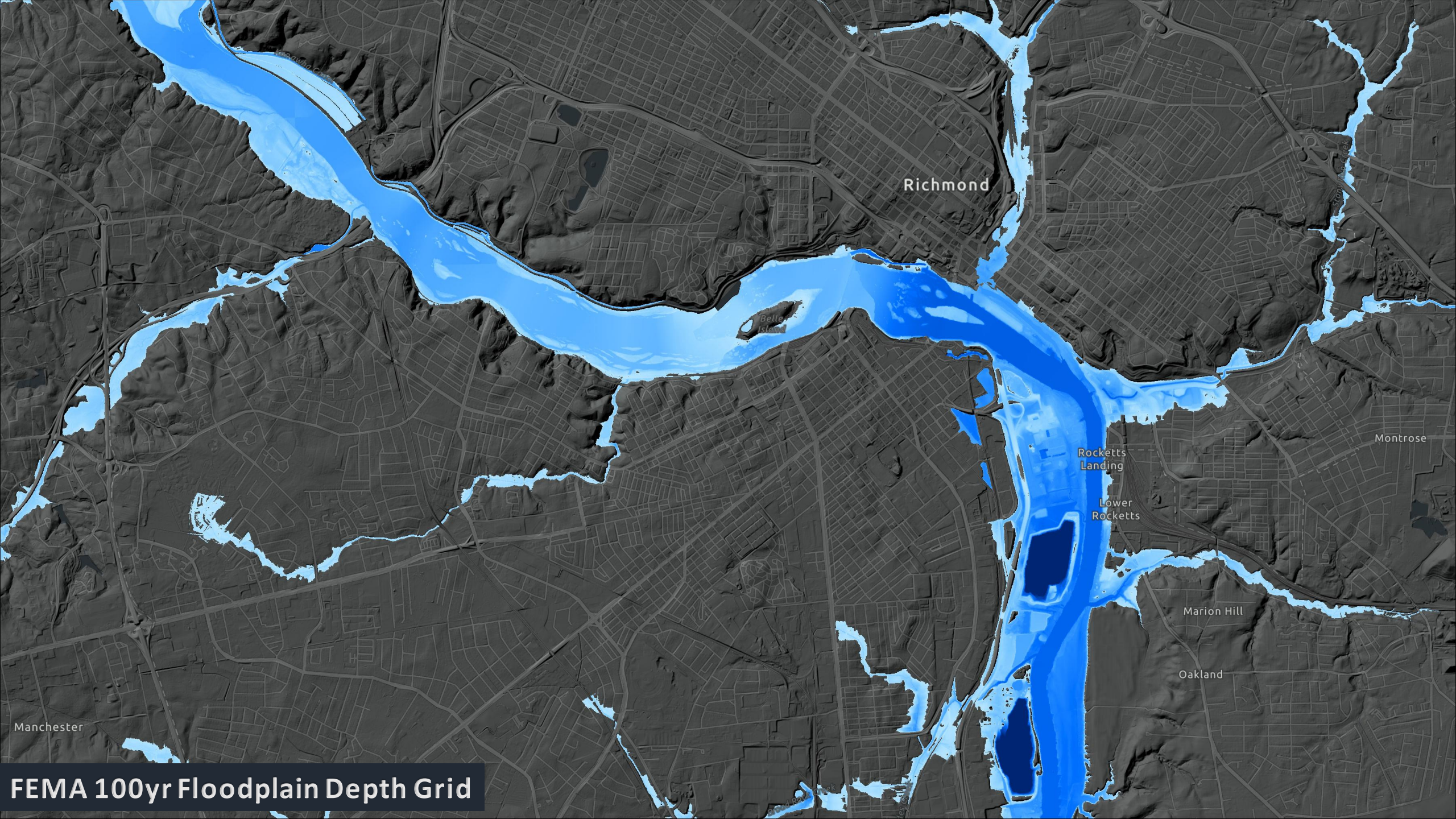


Products currently available:

- Graduated Floodplain
- Depth Grids
- Depth Grids with Wave Effects
- Water Surface Elevation

Recurrence Intervals/Tidal Level:

- Mean Low Water
- Mean High Water
- 1.5x Mean Tide Range
- Recurrence Intervals (Annual Exceedance Probabilities) shown at left.



Richmond

Belle Island

Rocketts Landing

Lower Rocketts

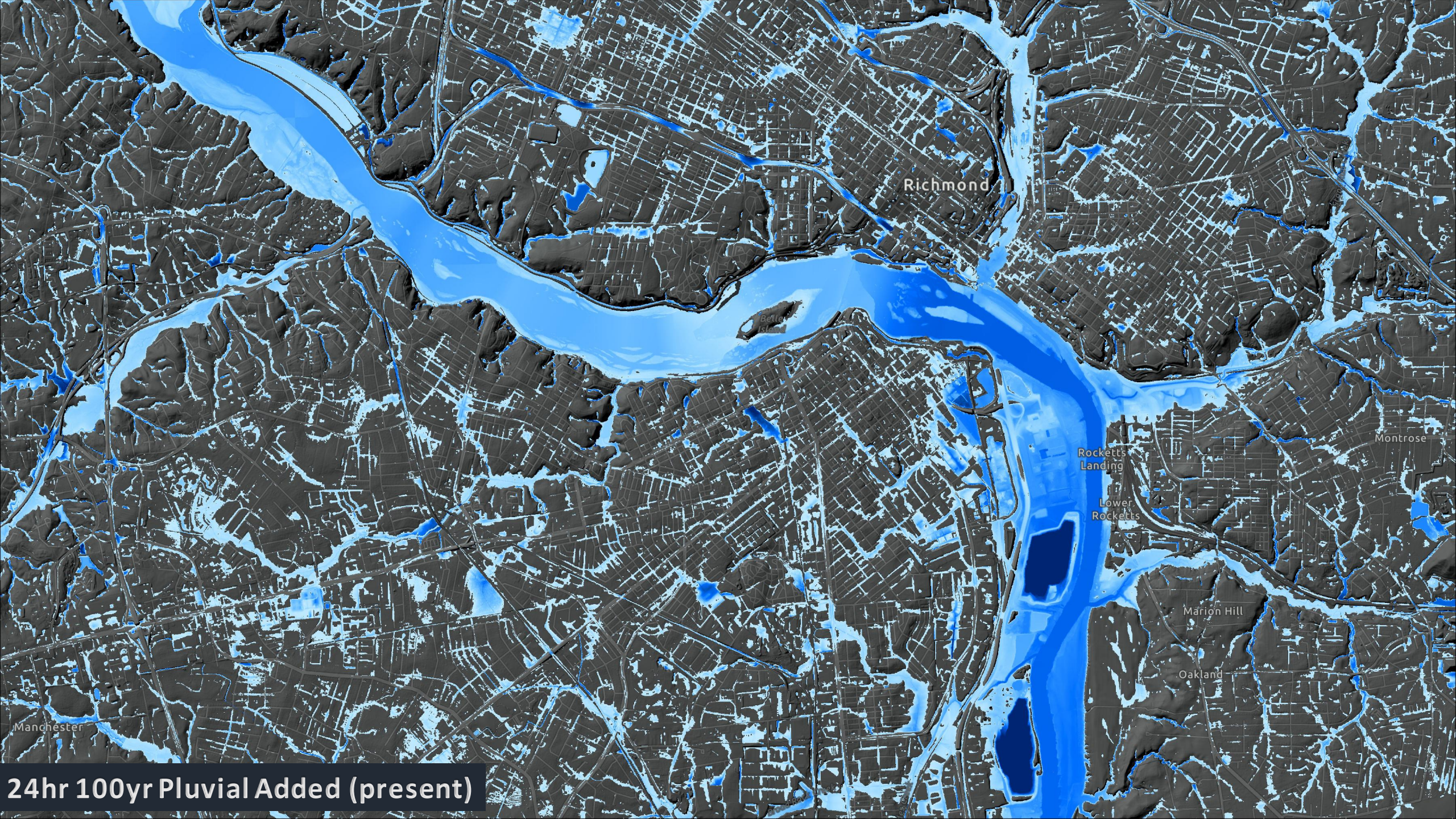
Marion Hill

Oakland

Montrose

Manchester

FEMA 100yr Floodplain Depth Grid



24hr 100yr Pluvial Added (present)

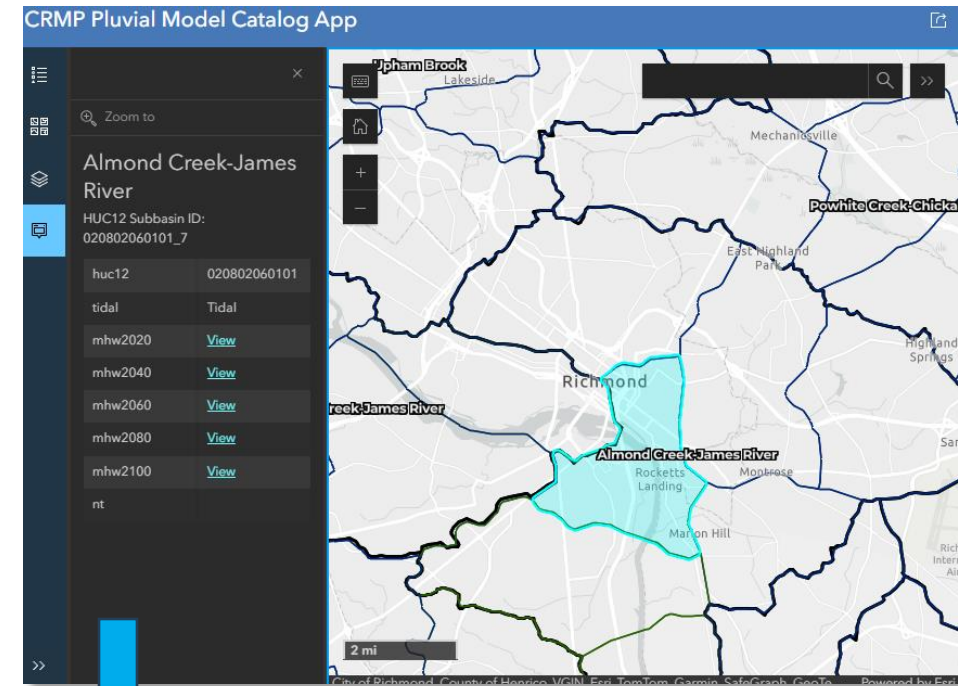
Rainfall Driven (Pluvial) Flood Data

Developed by watershed:

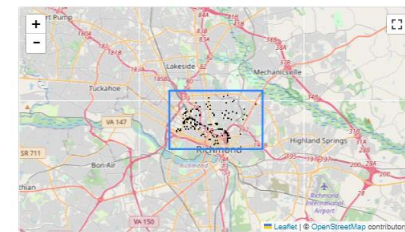
- Sub-HUC 12 level

Downloads available: [Model Catalog Link](#)

- Flood Engineering Models (HEC-RAS)
- GIS Raster Files (Depth Grids)
- Located under “Additional Resources” of STAC catalog



020802060101_2-nt-dgs



Metadata

General

Description This item includes Depth-Grid assets derived from HEC-RAS simulations (link to model data below) included in the CRMP Pluvial Flood Hazards analysis.

Time of Data 2024-04-29 1:24:33 UTC

VA DCR

Tidal Boundary ✗

Assets

Simulation: 2 hour 1.0 inches (p01)

SHOWN RAS-DEPTH-GRID LOG

Cloud-Optimized GeoTIFF image

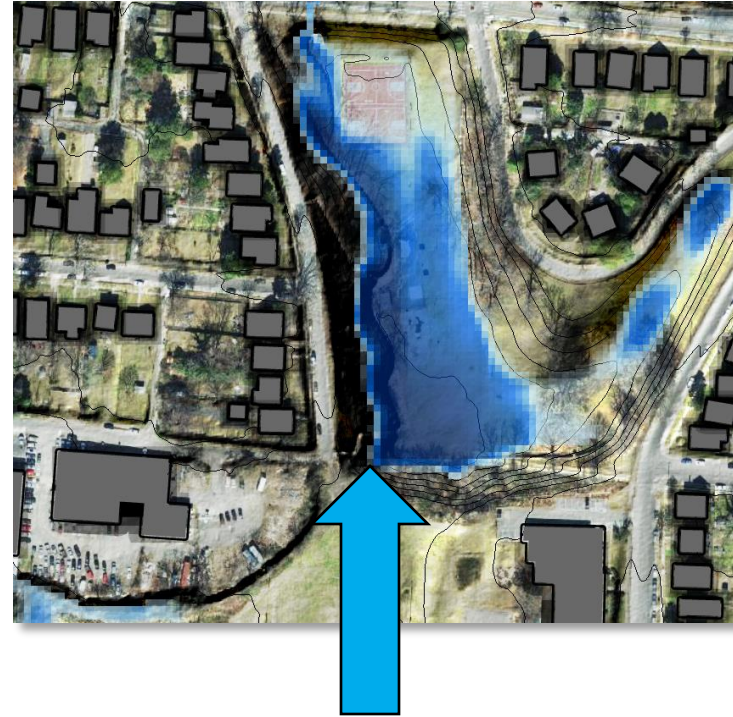
Download Copy URL Show on map



Illustrative Examples of Data Integration Options



Potential area of ponding water in a large parking lot with no Stormwater BMP nearby



Deepest ponding location in a public park that is starting to form a natural wetland



Homes that may experience flooding, but are mapped outside the effective SFHA (2014)

Illustrative examples meant to demonstrate potential ways the DCR data could complement local knowledge and data.

Pluvial Models Use Case Guide

Purpose:

Promote the use of the publicly available models and data products by:

- Describing models and data benefits and limitations
- Illustrating potential end use cases

Gather feedback to inform the guide's development.

Upcoming Workshops:

Agenda

- Overview of pluvial models
- Questions
- Participant input: polling, discussion

Date Options

- Friday, 6/28: 12:30 – 1:30 p.m.
- Monday, 7/1: 2 – 3 p.m.
- Both dates will offer the same content.
- Virtual meetings.

Group Discussion:

Input on Phase II Products and Tools – Flood Hazard Exposure Models

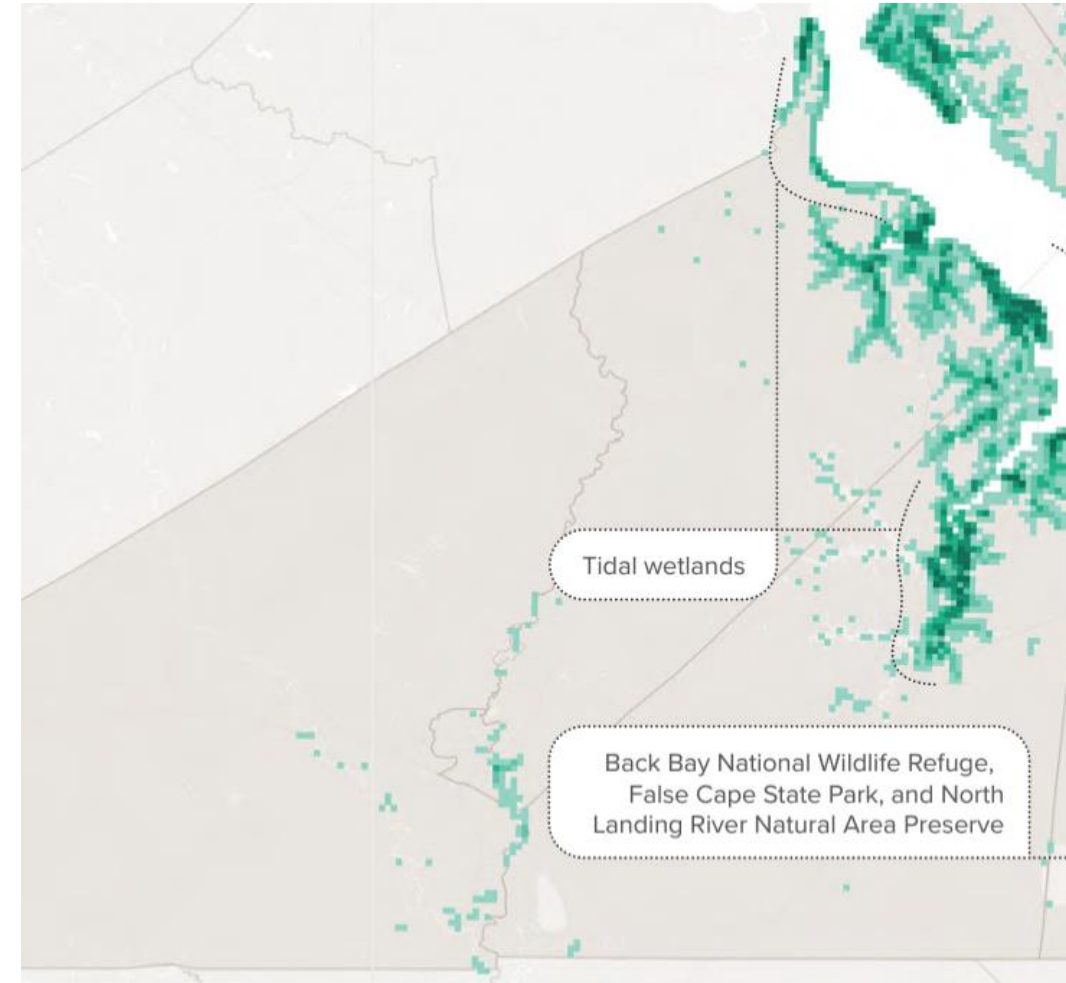
- Do you think you might use the flood hazard exposure models? If so, how?
- How do you usually access data and tools like GIS layers, HEC-RAS models, engagement tools, etc.?

Flood Hazard Impact Assessment

Flood Hazard Impact Assessment

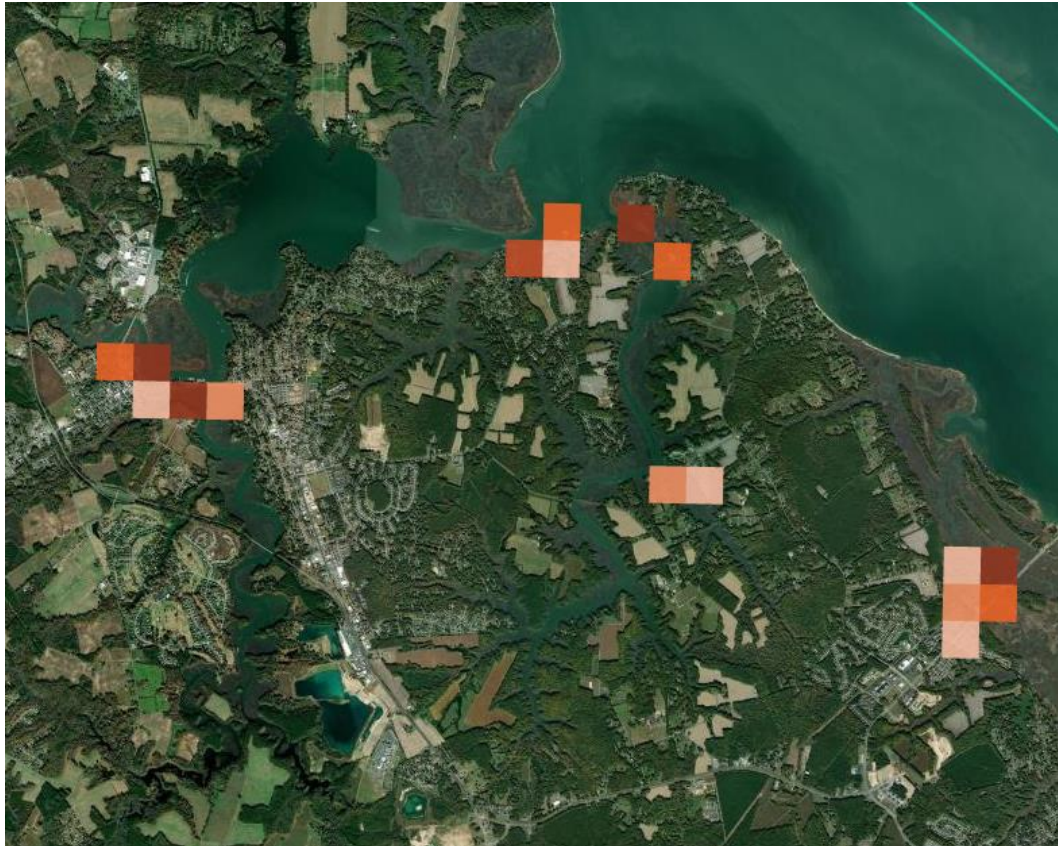
Tidal Wetlands	2020 Acres	2080 Acres	Change
Hampton Roads PDC	40,600	2,940	- 93%
Beaches and Dunes	2020 Acres	2080 Acres	Change
Hampton Roads PDC	2,290	1,780	- 22%
Upland Habitat	2020 Acres	2080 Acres	Change
Hampton Roads PDC	109,200	65,400	- 40%
Conserved Lands	2020 Acres	2080 Acres	Change
Hampton Roads PDC	223,400	187,200	- 16%

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



Flood Hazard Impact Assessment

dcr.virginia.gov/crmp/ResilienceExplorer

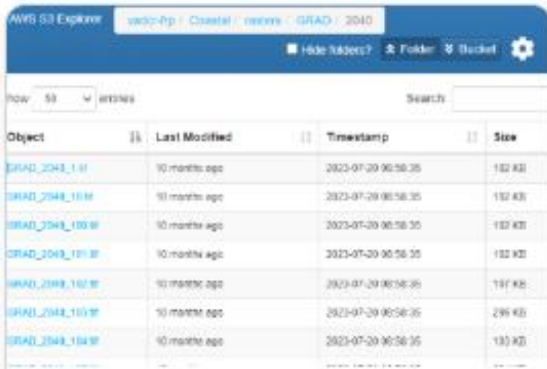


county_name	metric	units	2060_mlw	2060_mhw	2060_002	2060_005	2060_010	2060_025
Isle of Wight	Commercial Manufacturing	Count	49	43	30	1	4	4
Isle of Wight	Roads	Count	26	34	41	18	5	35
Southampton	Roads	Count	12	-	3	3	7	5
Southampton	Commercial Manufacturing	Count	5	-	1	3	1	4
Isle of Wight	Transportation Systems	Acres	5	-	1	-	-	-
Southampton	Transportation Systems	Acres	4	-	-	-	-	1
Franklin City	Roads	Count	3	-	1	-	-	-
Isle of Wight	Water_Waste_Wastewater	Count	2	4	8	3	1	3
Franklin City	Commercial Manufacturing	Count	2	-	1	-	-	-
Franklin City	Water_Waste_Wastewater	Count	1	-	-	-	-	-
Isle of Wight	Communication Systems	Count	1	-	-	-	-	-
Franklin City	Transportation Systems	Acres	1	-	-	-	-	-
Franklin City	Health Emergency Services	Count	-	-	-	-	-	-
Isle of Wight	Health Emergency Services	Count	-	-	-	-	-	-
Southampton	Health Emergency Services	Count	-	-	-	-	-	-
Franklin City	Government Facilities	Count	-	-	-	-	-	-
Isle of Wight	Government Facilities	Count	-	-	-	-	-	-
Southampton	Government Facilities	Count	-	-	-	-	-	-
Franklin City	Energy	Count	-	-	-	-	-	-
Isle of Wight	Energy	Count	-	1	4	-	-	-
Southampton	Energy	Count	-	-	-	1	-	-
Southampton	Water_Waste_Wastewater	Count	-	1	1	2	-	-
Franklin City	Communication Systems	Count	-	-	-	-	-	-
Southampton	Communication Systems	Count	-	-	-	-	-	-
Franklin City	Defense Facility Exposure	Acres	-	-	-	-	-	-
Isle of Wight	Defense Facility Exposure	Acres	-	-	-	-	-	-
Southampton	Defense Facility Exposure	Acres	-	-	-	-	-	-

Resilience Open Data Hub

Central location for all spatial data viewing and downloading

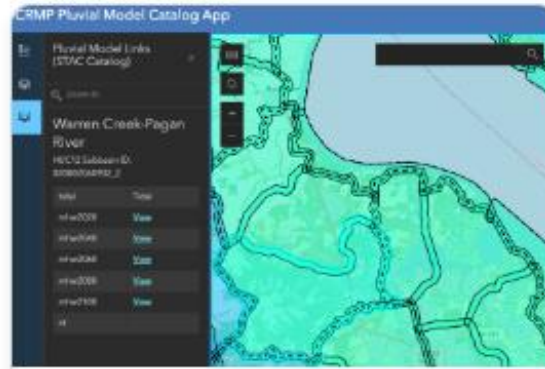
<https://crmp-vdcr.hub.arcgis.com/>



AWS Open Data Portal S3 Bucket

This link will send you to the AWS Open Data Portal where...

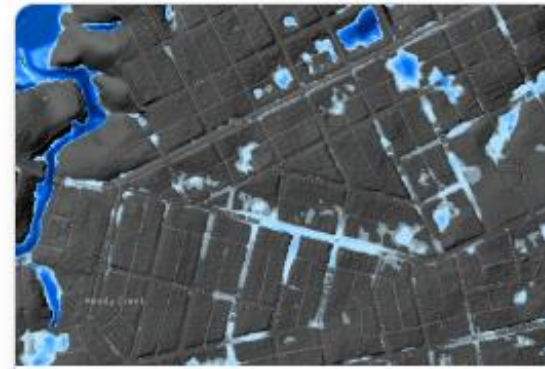
Explore



CRMP Pluvial Model Catalog App

Catalog of pluvial flood models developed for the Virginia...

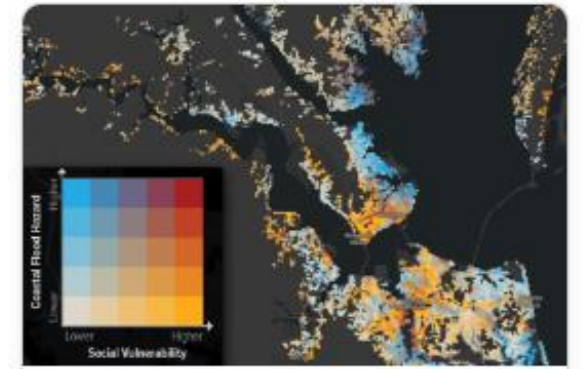
Explore



Pluvial Depth Grid 100yr (24hr Present)

Preview of Pluvial Hazard Data to be analyzed as part of the CR...

Explore



Social Vulnerability and Flood Hazard Bivariate...

Identification of areas with both high social vulnerability and...

Explore

How might you use these tools?

Planning & Zoning

- Comprehensive planning
- Zoning and Future land use planning
- Rezoning and variances
- Siting and design guidelines

Emergency Management

- Hazard mitigation planning
- Critical infrastructure siting

Community Development

- Property acquisition
- Economic development priorities
- Projecting potential changes in tax revenue

Public Works

- Baseline flood hazard data inputs for H&H modeling
- Baseline flood hazard data for design standards

Parks, Environmental Management

- Restoration and conservation priorities
- Property acquisition
- Public access planning

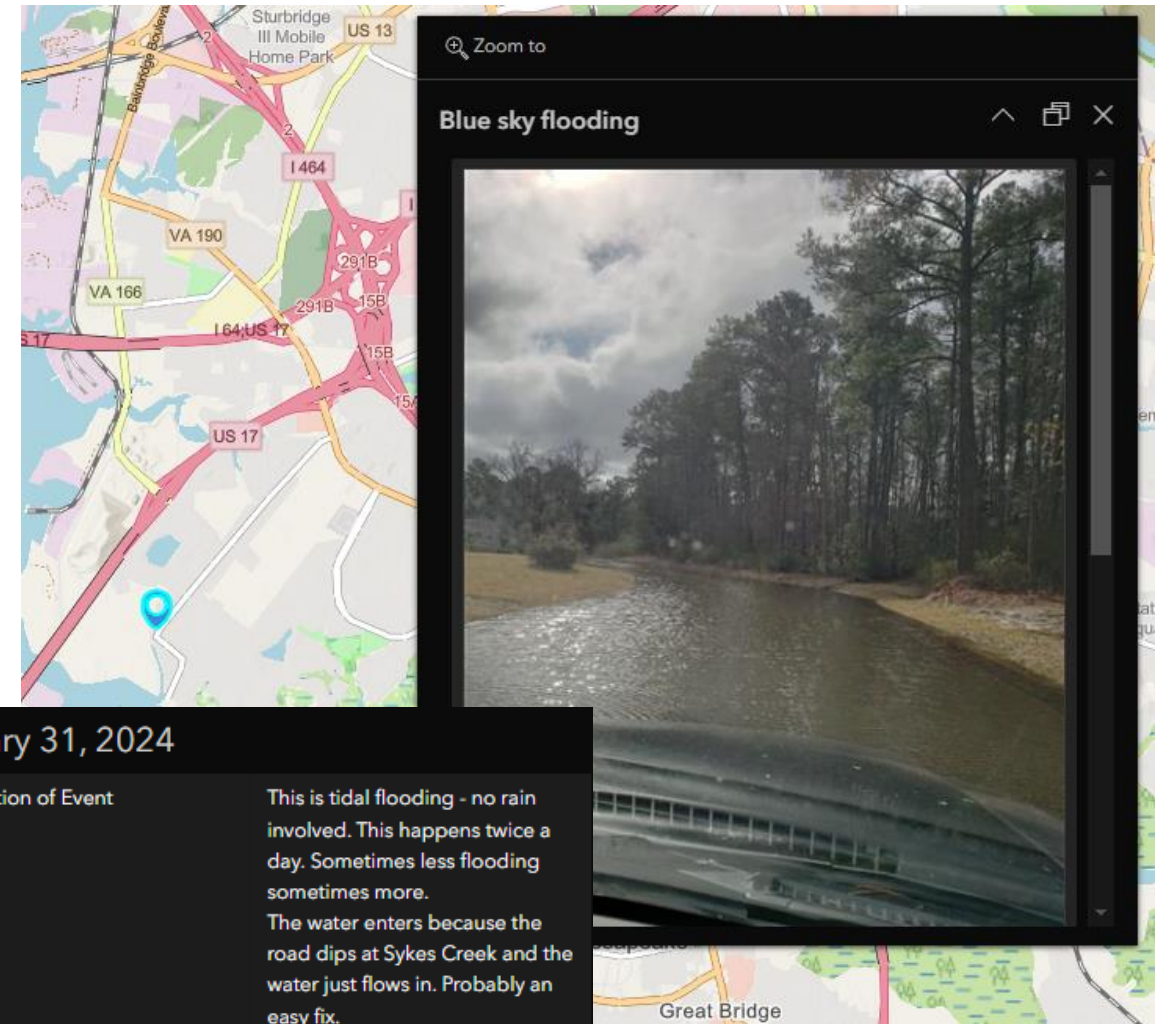
Group Discussion:

Input on Phase II Products and Tools – Flood Hazard Impact Assessment

- Do you think you might use the Flood Hazard Impact Assessment? If so, how?
- What assets are most important to include in a flood hazard impact assessment for your locality?

DCR Flood Story App

- www.dcr.virginia.gov/floodstory
- Publicly accessible online tool via Survey123
- Reviewed by staff before published
- Published flood stories appear in VFRIS
- DCR can share results back to local government staff



January 31, 2024

Description of Event	This is tidal flooding - no rain involved. This happens twice a day. Sometimes less flooding sometimes more. The water enters because the road dips at Sykes Creek and the water just flows in. Probably an easy fix.
Flooding Impacted	Property, Mobility, Public-services
Description of Impacts	Tidal flooding when coupled with rain floods our homes.
How often does it flood here?	
Type of Flooding	Tidal

Created on 5/13/2024, 2:44 PM.



Group Discussion:

Input on Phase II Products and Tools – Flood Story App

- Do you think you might use the Flood Story App? If so, how?
- Do you have an existing map tool for collecting input on the locations of flooding from the public?

Group Discussion:

Barriers to Addressing Flooding Concerns

- Consider the barriers to addressing flooding challenges in your locality (e.g., financial, staff capacity, lack of data, etc.) and discuss as a group.

Projects, Initiatives and Funding

Projects and Initiatives in the Plan

Purpose:

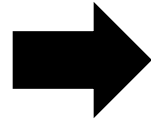
- ✓ Create a **record of flood resilience needs**, including funding needs.
- ✓ **Provide recommendations** for grant and loan **funding opportunities** for known project needs.
- ✓ Support **regional collaboration** and knowledge sharing.
- ✓ **Showcase** resilience **priorities and accomplishments**.

What types of actions are included?

- Programs, studies, plans, or projects
- Led or supported by the government
- Primary purpose to address the impacts of flooding on people, the environment, or the economy

Projects and Initiatives in the Plan

Projects and Initiatives Inventory
(Coastal Resilience Web Explorer)

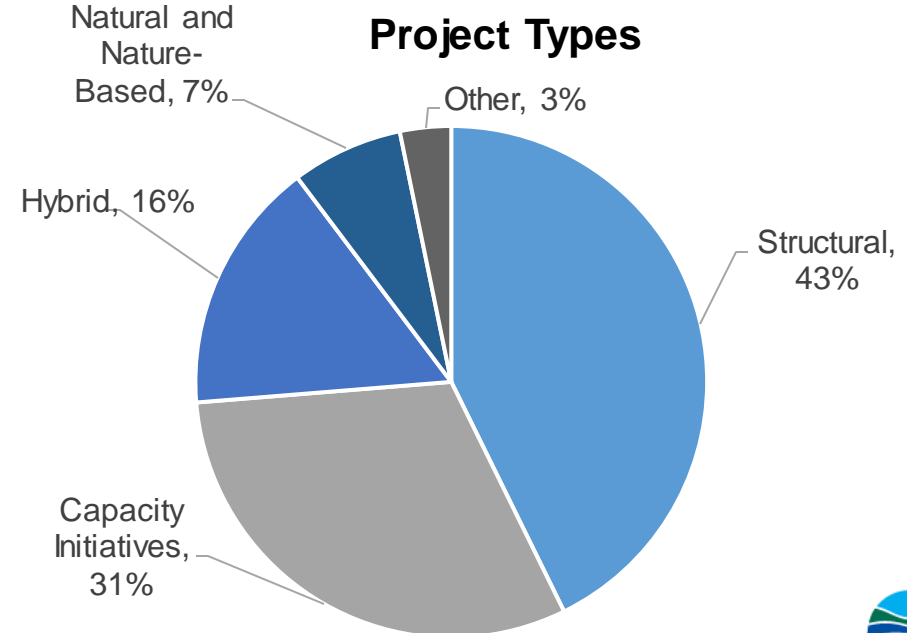


Planned Resilience Actions Analysis
(CRMP Phase II PDF Plan)

Search: Clear

Projects and Initiatives (Features: 78, Selected: 0)

<input checked="" type="checkbox"/>	Name
<input type="checkbox"/>	Adjustment to Floodplain Ordinance/Restricting Development
<input type="checkbox"/>	Advancing Resiliency in Virginia's Coastal Zone by Supporting Climate-Adaptive Nearshore Natural & Nature-Based Restoration Projects in York River, Piankatank River, & Mobjack Bay
<input type="checkbox"/>	Application of Floodplain Ordinance to potentially developed Local Floodplains from Project ID #28
<input type="checkbox"/>	Appomattox River Trail (blueway and greenway)
<input type="checkbox"/>	Belle Isle Shoreline Restoration
<input type="checkbox"/>	Belmont Road (Whitepine Rd to Corcoran Dr) Drainage Improvement
<input type="checkbox"/>	Climate Change Vulnerability and Risk Assessments
<input type="checkbox"/>	Conservation Targeting for Resilience
<input type="checkbox"/>	Consideration of Floodplain Ordinance
<input type="checkbox"/>	Dam Inventory and Assessment



Funding Database and Summary

Searchable Database

Search by Column:

VA Funding for Projects (Features: 97, Selected: 0)

Name	Administering Office	Funding Source	Funding Type	Purpose
Addressing the Impacts of Multiple Stressors on Shellfish Aquaculture Through Research/Industry Partnerships	National Oceanic and Atmospheric Administration (NOAA) Oceanic and Atmospheric Research	NOAA	Federal	Support multiple priority aquaculture shellfish applications
Building Resilience Against Climate Effects: Implementing and Evaluating Adaptation Strategies that Protect and Promote Human Health	National Center for Environmental Health	CDC	Federal	Support overall data evaluation to improve
Bureau of Indian Affairs (BIA) Tribal Climate Resilience Program	Department of Interior, Bureau of Indian Affairs (BIA), Trust Services, Tribal Climate Resilience Program	BIA	Federal	Support preparation of Av: or Pro



Project to Funding Matching

Name: Belmont Road (Whitepine Rd to Corcoran Dr) Drainage Improvement This project will construct a multiple barrel box culvert and curve realignment on Belmont Road between Whitepine Road and Corcoran Drive to address routine flooding.

Location: Chesterfield County

Type: Structural - Utility Retrofit / Upgrades

Coastal Hazards Addressed: Stormwater Flooding

Phase: Final Design/Permitting

Owner: Chesterfield County

Climate Standards: No Scenarios

Implementation Cost: \$4,500,000

The table and sections below summarize the funding sources and financing mechanisms identified by the Master Plan process to potentially support coastal resilience projects.

Funding Sources

Funding programs provide money to pay for specific project operating and/or capital costs. These programs can include grants and loans from federal and state agencies and private philanthropies.

VA Projects & Fundings (Features: 18, Selected: 0)

Funding Source Name	Administering Office	Cost Share	Award Max (\$)	Purpose
EPA	Environmental Protection Agency (EPA)	51%		Support infrastructure projects which hurricane
USACE	U.S. Army Corps of Engineers (USACE), Norfolk District	Varies based on applicable project phase	10,000,000	Support shore vegetation estuarine
USACE	U.S. Army Corps of Engineers (USACE), Norfolk District			Support projects

Existing Projects and Initiatives in the Inventory

Category	Owner	Project Name	Description	Purpose and Need
project	Southampton County	Siege Lane Pond	Newsoms Housing and Drainage Improvements Project Phase 1	Stormwater Flooding
initiative	Southampton County	Bypass Road Stream Restoration	Southampton County Resilience Plan chapter of Comprehensive Plan	Community Resilience, Economic Resilience, Funding Capacity, Planning Capacity

Group Discussion:

Review of the Coastal Resilience Web Explorer Projects and Initiatives

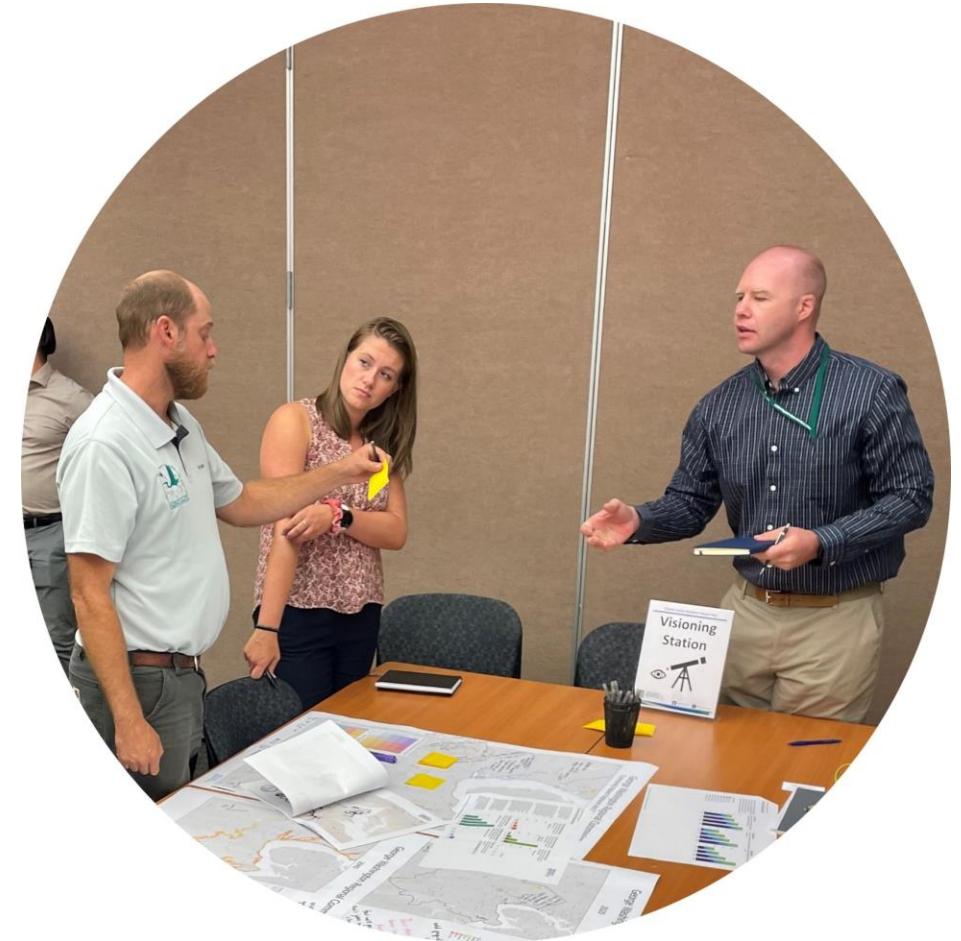
1. What other projects, programs, plans, or policies are you working on to address flooding in your community?
2. Please type in chat the following for any missing project/initiative for your locality:
 - I. Owner (locality)
 - II. Project name/description
 - III. Contact (name, title, phone, and email)

More Opportunities to be Involved

- Pluvial use case guide workshops
 - June 28th, July 1st
- Public webinars
 - September and December 2024
- Quarterly TAC meetings
 - September 18th and November 13th
- Public comment
 - Early 2025

DCR calendar:

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



DCR Flood Resilience Funding Opportunities

Community Flood Preparedness Fund

- Grant manual public comment period open through July 17th.
 - [Submit a public comment](#)
- CFPF Round 5 application period scheduled to open this fall.

Resilient Virginia Revolving Loan Fund

- Available in two categories:
 - Non-Federal Match (for Federal grants and loans) \$5 million
 - Hazard Mitigation of Buildings \$7.5 million
- Applications accepted **until June 30.**

Community Rating System Training

Upcoming FEMA Virtual Workshops

Offering #1:

- August 20-21, 2024
- 9:00am
- [Register Online](#)

Offering #2:

- September 11-12, 2024
- 10:30am
- [Register Online](#)

Stay in Touch!

Office of Resilience Planning
flood.resilience@dcr.virginia.gov

Sign up for our newsletter:
www.dcr.virginia.gov/signup

dcr.virginia.gov/resilience-planning

Input Dataset	Source	Date Last Updated	Spatial Data Type	Sensitive Data? (Limited Asset Data Released Publicly)
Above Ground LNG Storage Facilities	Homeland Infrastructure Foundation-Level Database (HIFLD), original source unclear	12/15/2022	Points	
Airports	United States Department of Transportation, Federal Aviation Administration-Aeronautical Information Services (Accessed via ArcGIS Hub)	11/30/2023	Points	
AM Transmissions Towers	Federal Communications Commission Licensing Database (accessed via HIFLD)	5/7/2022	Points	
Amtrak Stations	Virginia Department of Rail & Public Transportation (DRPT)		Points	
Bridges & Culverts	Virginia Department of Transportation (VDOT)	1/19/2024	Points	
Broadband Radio Service and Educational Broadband Service Transmitters	Federal Communications Commission (accessed via HIFLD)	11/23/2021	Points	
Bus Routes	Virginia Department of Rail & Public Transportation (DRPT)	3/1/2024	Lines	
Bus Stations	Virginia Department of Rail & Public Transportation (DRPT)	3/1/2024	Points	
Cellular Towers	Federal Communications Commission (accessed via HIFLD)	6/1/2022	Points	
Child Care Facilities	Virginia Department of Social Services (accessed via HIFLD)	12/8/2022	Points	
Conservation Lands	Virginia Department of Conservation and Recreation (DCR)	11/1/2023	Area Polygons	
Conservation Priority Area: Agriculture and Forestry	DCR Agriculture and Forestry (ConserveVA)	11/18/2021	Area Polygons	
Conservation Priority Area: Natural Habitat and Ecosystem Diversity	Natural Habitat and Ecosystem Diversity Exposure (ConserveVA) (DCR)	11/18/2021	Area Polygons	
Conservation Priority Areas: Protected Landscapes Resilience	DCR Protected Landscapes Resilience (ConserveVA)	11/18/2021	Area Polygons	
Dams	Virginia Department of Conservation and Recreation (DCR)	2/12/2024	Points	
Development Vulnerability Model	Virginia Department of Conservation and Recreation (DCR)	6/16/2022	Raster	
Emergency Medical Service Stations	Homeland Infrastructure Foundation-Level Database (HIFLD), original source unclear	6/1/2022	Points	
Emergency Operations Centers	Virginia Department of Emergency Management (VDEM)	10/1/2023	Points	
EPA Toxic Substance Control Act Facilities	United States Environmental Protection Agency (EPA)	3/11/2024	Points	
FDIC Insured Banks	Federal Deposit Insurance Corporation (accessed via HIFLD)	5/17/2022	Points	
Federal Real Property Public Dataset	U.S. General Services Administration	10/25/2023		
Federally-Owned Land	Chesapeake Bay Program's Federal Facilities Workgroup	1/1/2017		
Federally-Owned Land	BLM, DoD, USFS, USFWS, NPS, PADUS 2.1 (accessed via ESRI)	7/7/2023	Area Polygons	
Fire Stations	U.S. Geological Survey, National Geospatial Technical Operations Center (Accessed via HIFLD)	10/22/2023	Points	
FM Transmissions Towers	Federal Communications Commission (accessed via HIFLD)	9/18/2018	Points	
General Manufacturing Facilities	Industrial PinPointer database of manufacturing companies (accessed via HIFLD)	7/3/2023	Points	
Hazardous Waste Generators	U.S. Environmental Protection Agency (EPA) (accessed via VGIN)	11/18/2020	Points	
Higher Education Facilities	National Center for Education Statistics (accessed via HIFLD)	12/7/2022	Points	
Historic Resources	Virginia Department of Historic Resources (VDHR)		Area Polygons	Y
Hospitals	Oak Ridge National Laboratory (Accessed via HIFLD)	9/20/2023	Points	
Hurricane Evacuation Routes	Virginia Department of Transportation (VDOT), VDOT	9/20/2023, 9/30/2023	Lines	Y
Industry-Specific Manufacturing	HIFLD Secure	3/15/2024	Point	Y
Land Cover Data	Chesapeake Conservancy and Virginia State	1/1/2018	Raster	
Land Mobile Broadcast Towers	Federal Communications Commission (accessed via HIFLD)	9/18/2021	Points	
Land Mobile Commercial Transmission Towers	Federal Communications Commission Licensing Database (accessed via HIFLD)	11/23/2021	Points	
Land Use Data	Chesapeake Conservancy	1/1/2018		
Local Law Enforcement Facilities	Oak Ridge National Laboratory (Accessed via HIFLD)	2/1/2021	Points	
Major State Government Buildings	Technographics Inc. (accessed via HIFLD)	10/19/2021	Points	
Microwave Service Towers	Federal Communications Commission (accessed via HIFLD)	8/23/2022	Points	
National Shelter System Facilities	Federal Emergency Management Agency (FEMA) (accessed via HIFLD)	7/3/2023	Points	
Natural and Nature-Based Features	Virginia Institute of Marine Science (VIMS)	1/1/2021	Area Polygons	

Natural Gas Receipt Delivery Points	Oak Ridge National Laboratory (accessed via HIFLD)	12/11/2023	Points	
Nature Based Recreational Access Model	Virginia Department of Conservation and Recreation (DCR)	7/1/2021	Raster	
NOAA Marsh Migration	NOAA	5/30/2023	Raster	
Paging Transmission Towers	Federal Communications Commission Licensing Database (accessed via HIFLD)	9/18/2021	Points	
Petroleum Ports	Federal Communications Commission (accessed via HIFLD)	1/8/2022	Points	
Petroleum Registered Tank Facilities	Virginia Department of Environmental Quality (DEQ)	1/9/2024	Points	
Petroleum Terminals	Federal Communications Commission (accessed via HIFLD)	4/5/2022	Points	
Population Demographics	American Community Survey (ACS), US Census Bureau (from 2021 TIGER data)	7/20/2023		
Port of Virginia Facilities	Virginia Economic Development Partnership (VEDP)	10/22/2022	Points	
Power Plants	Oak Ridge National Laboratory (accessed via HIFLD)	9/21/2023	Points	
Predicted Suitable Habitat for Sensitive Species	High-resolution Predicted Suitable Habitat Summary (non-public dataset); (DCR)	12/5/2023	Area Polygons	Y
Private Schools	National Center for Education Statistics (accessed via HIFLD)	10/4/2023	Points	
Public Refrigerated Warehouses	The International Association of Refrigerated Warehouses (accessed via HIFLD)	7/5/2023	Points	
Public Schools	National Center for Education Statistics (accessed via HIFLD)	12/7/2022	Points	
Public Water Supply	Virginia Department of Health (VDH)	7/14/2016	Points	Y
Railroad Crossings	Virginia Department of Rail and Public Transportation (DRPT)	5/1/2020	Point	
Railways	Virginia Department of Rail & Public Transportation (DRPT)		Lines	
Road Intersections	Virginia Department of Transportation (VDOT)	3/22/2023	Points	
Roadway Centerlines	Virginia Geographic Information Network (VGIN); Virginia Department of Transportation (VDOT)	1/12/2024	Lines	
Septic Systems	Virginia Department of Health (VDH)		Points	
Social Vulnerability Index	Virginia Department of Conservation and Recreation (DCR)	10/18/2023		
Solid Waste Facilities	Virginia Department of Environmental Quality (DEQ)	7/12/2023	Points	
State Building Inventory	Virginia Department of General Services (DGS)			
Structures (Lightbox/HIFLD)	Lightbox/HSIN (accessed via HIFLD Secure)	7/15/2023	Structure Polygons	Y
Substations	HIFLD Secure	7/20/2023	Points	Y
Supplemental Colleges	National Center for Education Statistics (accessed via HIFLD)	12/7/2022	Points	
Tribal-Owned Lands	United States Census Bureau	11/11/2023	Area Polygons	
TV Analog Transmitters	Federal Communications Commission (accessed via HIFLD)	12/16/2021	Points	
U.S. Army Corps of Engineers (USACE) Offices	USACE (accessed via HIFLD)	12/18/2023	Points	
VDOT Average Daily Traffic (ADT)	Virginia Department of Transportation (VDOT)	2/3/2024	Line	
VDOT Roadway Centerlines	Virginia Department of Transportation (VDOT)	3/11/2024	Line	
VGIN Building Footprint Data (Phase I)	Virginia Geographic Information Network (VGIN)		Polygon	
Wastewater Treatment Facilities	United States Environmental Protection Agency (EPA) (accessed via HIFLD)	4/17/2022	Points	
Watershed Impact Model	Virginia Department of Conservation and Recreation (DCR)	6/7/2022	Raster	