

Virginia Coastal Resilience Technical Advisory Committee

Outreach & Coordination Quarterly Subcommittee Meeting

Thursday, February 22, 2024, 10:00 am

Conference Room 2, Patrick Henry Building

1111 E Broad Street, Richmond, VA 23219

Virtual Access: [Register Online](#)



Name	Organization
Martin Brown	Office of Diversity, Opportunity and Inclusion
Michael Perez	
William Curtis	Virginia Department of Housing and Community Development
Charles P. Boyles, II	George Washington Regional Commission
Meredith Keppel	
Cameron Bruce	Nansemond Indian Nation
Jill Bieri	The Nature Conservancy
Reggie Tupponce	Upper Mattaponi Indian Tribe
Colonel Brian P. Hallberg	U.S. Army Corps of Engineers, Norfolk District
Greggory Williams	
Martha Moore	Virginia Farm Bureau
Katelyn Rose Jordan	
Brett Vassey	Virginia Manufacturers Association
Mary-Carson Stiff	Wetlands Watch
Joseph Howell	Navy Region Mid-Atlantic

Meeting Agenda

1. Call to Order, Roll Call
2. Adoption of Agenda
3. Adoption of Q4 2023 Meeting Minutes
4. Subcommittee Overview
5. Old Business
 - a. Outreach and Engagement Strategy Update
6. New Business
 - a. Recommendations for Future Planning
 - b. Subcommittee Discussion
7. Public Comment
8. Action Items, Scheduling
9. Adjourn



Coastal Resilience Master Plan, Phase II

Purpose

A **place-specific** plan for mitigating severe and repetitive flooding.

Incorporates:

- **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

Elements

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

Details

- Dec. 2024 timeline for delivery
- Updated every five years
- Est. in Code §[10.1-658, 659](#)

Subcommittee Objectives

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.

Subcommittee Schedule

Q3 2023

CRMP PII – Engagement Strategy and Approach Draft (Review 1)

CRMP PII – Stakeholder Identification and Prioritization

Q4 2023

CRMP PII – Stakeholder Gaps Analysis Review

CRMP PII – Finalize Engagement Strategy and Approach (Review 2)

Q1 2024

CRMP PII – Outreach and Engagement Implementation Feedback and Support

Future Plans – Recommendations

Q2 2024

CRMP PII – Outreach and Engagement Implementation Feedback and Support

Future Plans – Recommendations

Q3 2024

CRMP PII – Outreach and Engagement Implementation Feedback and Support

Future Plans – Recommendations

Q4 2024

Future Plans – Final Recommendations

General Updates

Contractor Support for CRMP Phase II

Dewberry:

- Flood hazard data
- Impact assessment
- End user survey analysis
- Web explorer update mock-up

Status: in progress

TBD Contractor(s):

- Projects & initiatives analysis
 - Includes assistance to end users to submit projects
- Financial tools and information
- Public outreach*
- Stakeholder engagement
- Final report development
- Web explorer updates

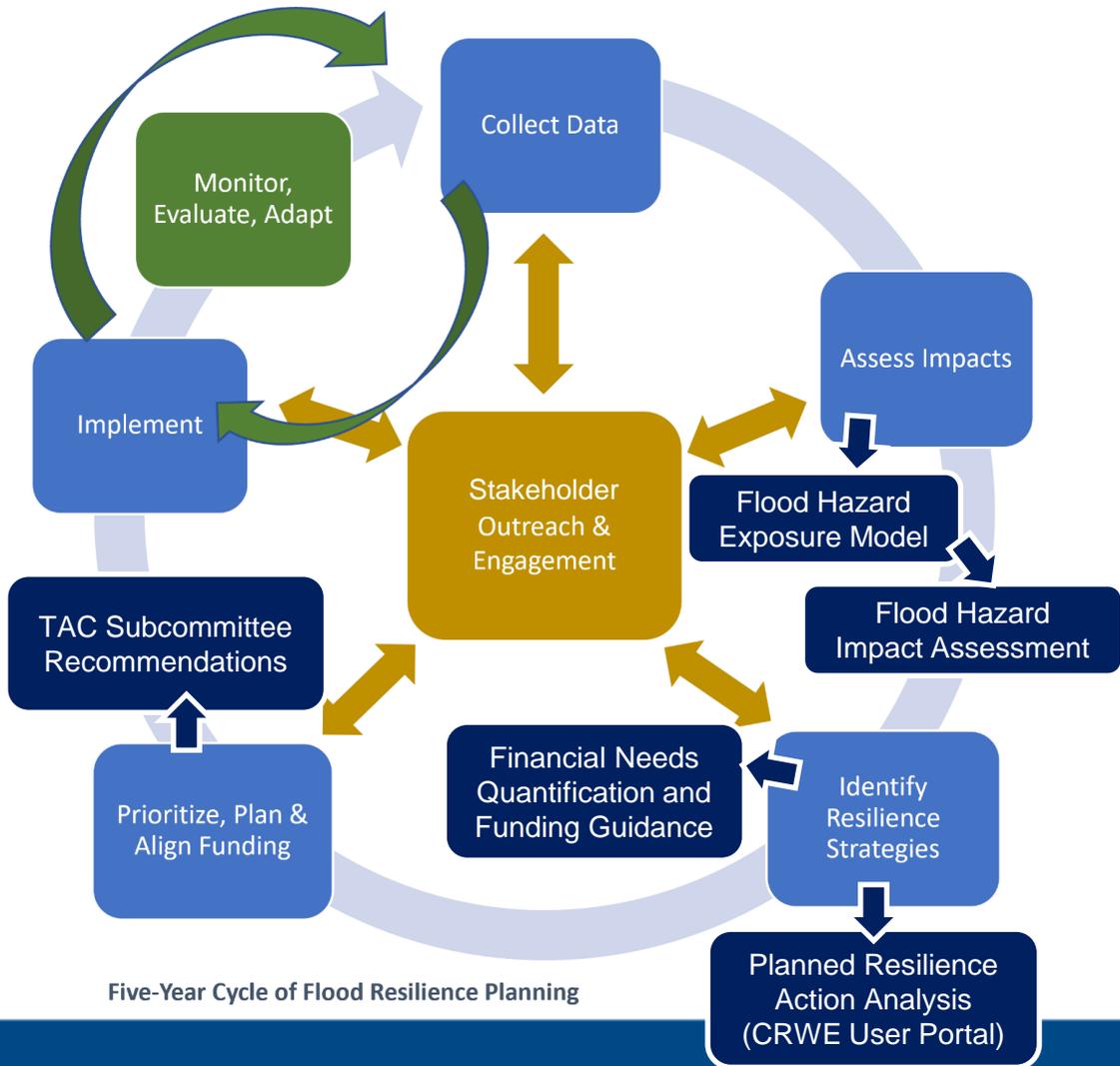
Status: DCR selecting consultant(s)

Old Business

Outreach and Engagement Strategy Updates



CRMP Phase II O&E Goals



1. **Understand** how the plan can be leveraged by intended **end users**.
Localities, PDCs, state agencies, tribes.
2. **Contextualize** the plan's content with qualitative data on **flood impacts**.
3. **Contextualize** the plan's content with information on planned and ongoing **interventions** to address risk in the planning area.
4. **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:

- The existence, purpose, and contents of the Coastal Resilience Master Plan, Phase II.
- Opportunities to participate in engagement activities during the planning process.
- 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



Get involved in the Coastal Resilience Master Plan, Phase 2



Phase 2 of the [Coastal Resilience Master Plan](#) is underway. DCR's full list of planned outreach and engagement activities for the plan in 2024 are now available [on our website](#). In the first half of this year, you can expect:

- Meetings of the **Coastal Resilience Technical Advisory Committee and Subcommittees**. All meeting details are posted on [our calendar](#). The meetings are open to the public for comment, and live-streamed online. Subcommittees will convene next between Jan. 23 - Feb. 22. *Timeline: ongoing, quarterly.*
- **Workshops and trainings with local governments and tribal governments**. DCR will share information about the master plan products, and request feedback on planned resilience efforts, challenges and opportunities. *Timeline: spring.*
- **Community meetings** co-hosted with community-based organizations interested in learning more about the master plan and how to build their flood resilience. This effort will prioritize meetings with organizations serving or representing underserved communities. [Contact us](#) to learn more. *Timeline: spring-summer.*

Stay tuned to our newsletter and website throughout the year for updates!

Opportunities to Be Engaged and Learn More

1. Collaborative Advice and Decision Making

2. Guiding Input from End Users and Key Stakeholders

3. Public Participation and Feedback

Participatory Mapping Tool

A new online map tool will allow individuals to submit photos and descriptions about how they have experienced flooding challenges in the past. Share information about your flooding concerns and assets in your community. More information coming soon!

Timeline: Launch planned for Summer 2024

Community Meetings

DCR will co-host or attend meetings with community-based organizations interested in learning more about the master plan, and how to build flood resilience in their communities. This effort will prioritize meetings with organizations serving or representing underserved communities. [Contact us](#) to learn more or [request a meeting](#) online.

Timeline: Spring-Summer 2024

Public Webinars DCR will host two sets of public webinars to share information about the Coastal Resilience Master Plan update. Webinars will be recorded and posted here to our website. Check back or [sign up for our newsletter](#) for more details.

Timeline: Summer 2024 and Late Fall 2024

Public Comments

DCR will release the final draft Coastal Resilience Master Plan, Phase II for public comment at the end of the plan development process. Check back or [sign up for our newsletter](#) for more details.

Timeline: December 2024

Communicating the types of planned activities.

A summary of our outreach and engagement plans was shared via our newsletter and website.

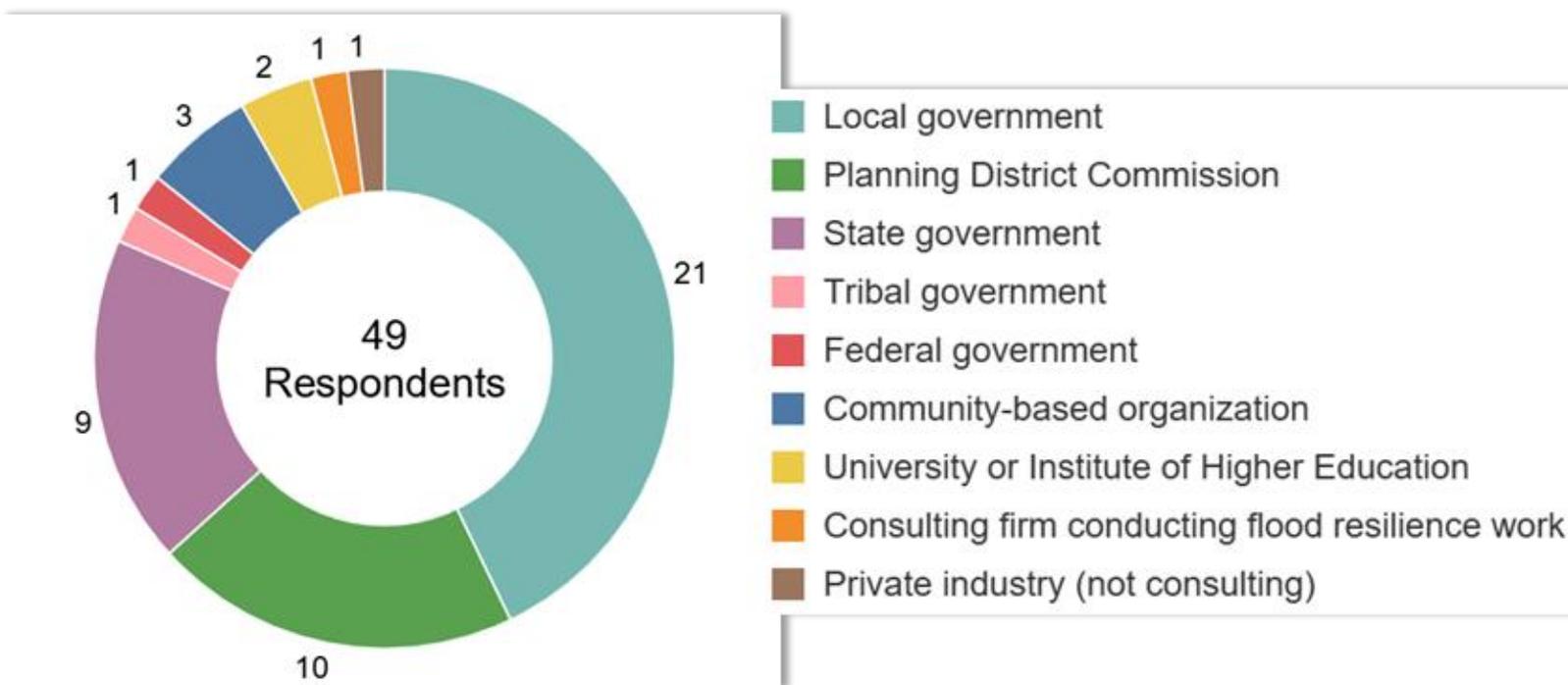
Outreach and Engagement Activities

Activity		Complete by	Status	Stakeholders	O&E Strategy Goals
1	Coastal Resilience TAC	Ongoing (quarterly)	In progress	Primary plan end users and partners	All goals
2	NGO Coordination Meetings	Ongoing (monthly)	In progress	Non-profits and other partners	Drive awareness (4)
3	Critical Infrastructure Working Group (led by VDEM)	Ongoing	Development	Critical infrastructure owners and managers	Understand end users (1); contextualize interventions (3); Drive awareness (4)
4	End-User Survey	Jan '24	Complete	Primary plan end users	Understand end users (1)
5	Participatory Mapping Tool	Mar '24	Development	Public	Contextualize flood impacts (2)
6	Locality Meetings	May '24	Development	Local governments	All goals
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End-User Survey

Who Responded?

41 responses from intended end-users.

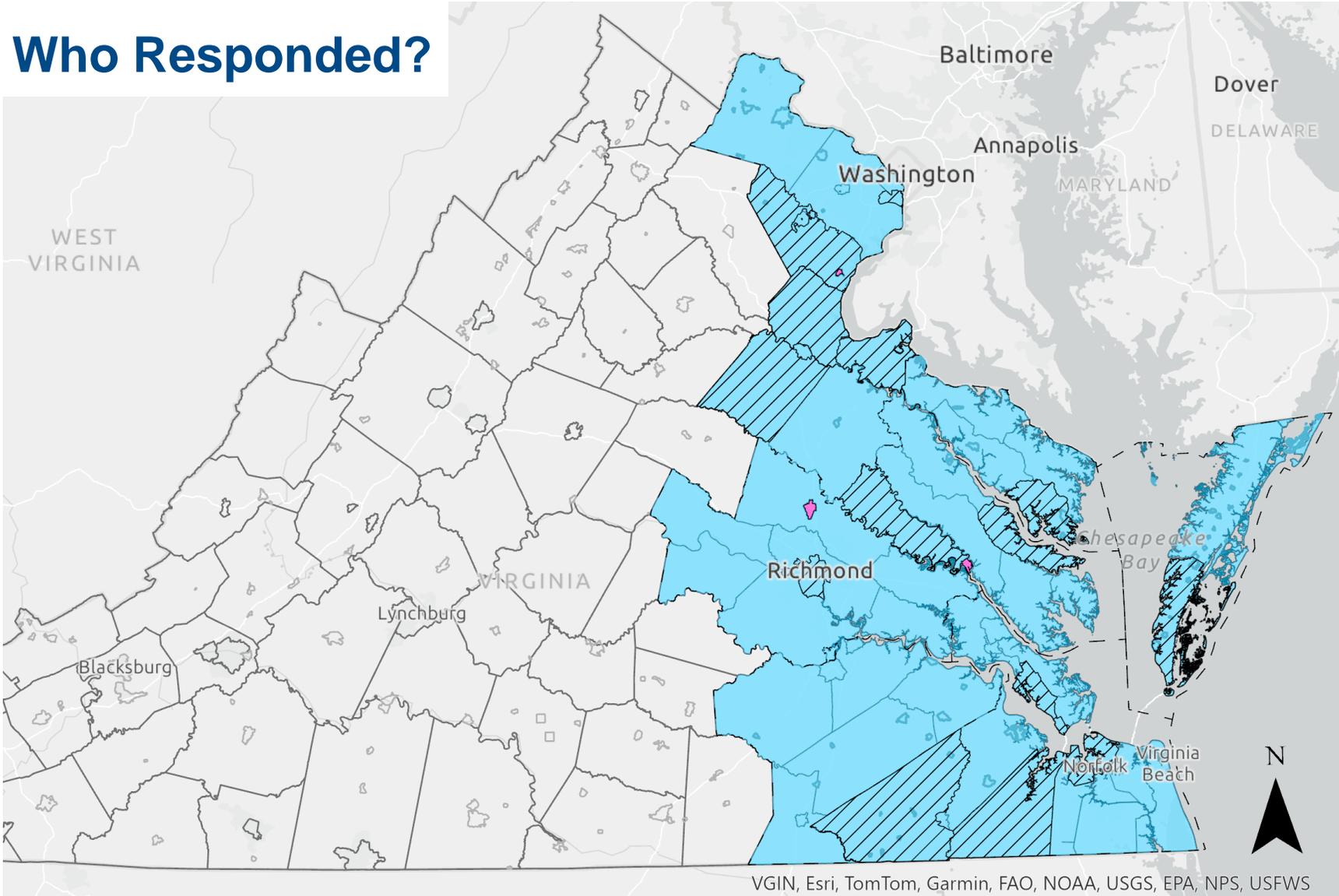


Respondents included:

- All eight coastal PDCs
- One tribal government
- Six state agencies:
 - DEQ
 - DCR
 - DHCD
 - VDEM
 - VDOT
 - Virginia Port Authority

End-User Survey

Who Responded?



18 local governments responded.

At least one local government responded from every PDC except Crater.

Soliciting Participation:

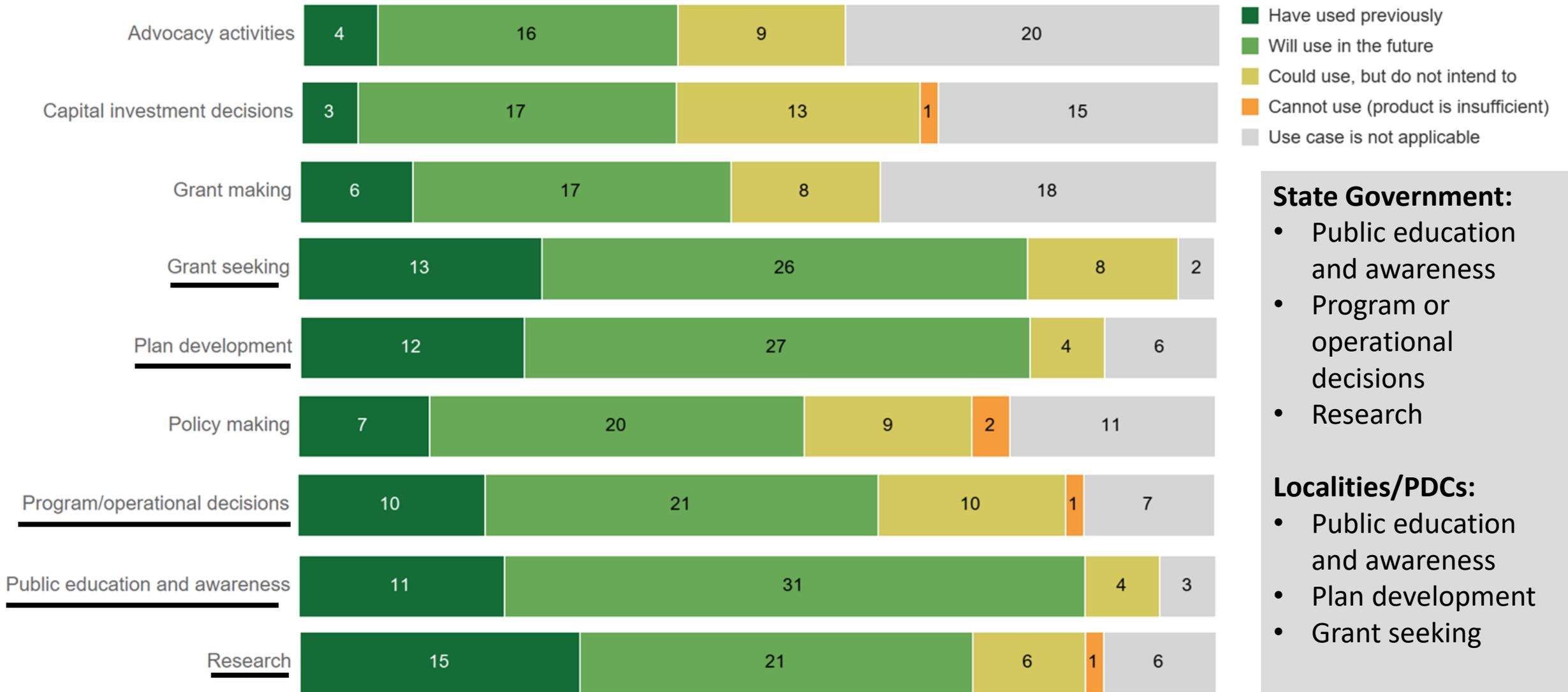
- Emails and presentations.
- Personalized follow-up is helpful.
- If we had additional resources, calling and interviews would help.

End-User Survey

Key Takeaways:

- Most respondents think the Phase I products are useful.
 - The Web Explorer is most used
 - Open data downloads are least used
- The CRMP products have previously been utilized for a wide variety of use cases
 - Across all use cases, many more respondents said they will use the products in the future than said they have used the products previously.
- Respondents are overwhelmingly interested in funding flood resilience with federal or state grants and are not considering other types of funding.
- Respondents see clear opportunities for the Commonwealth to support flood resilience.

How have/can the Phase I products be used?



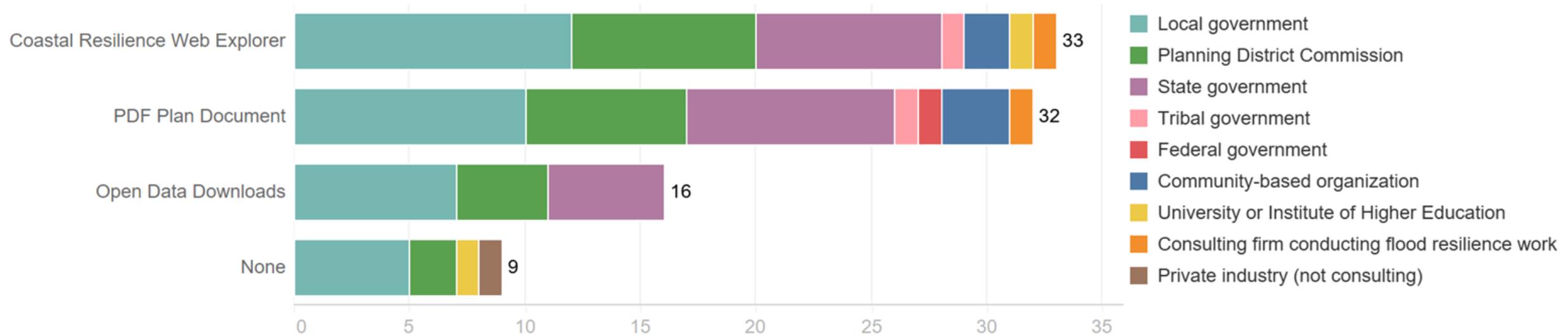
State Government:

- Public education and awareness
- Program or operational decisions
- Research

Localities/PDCs:

- Public education and awareness
- Plan development
- Grant seeking

Which products have been used?



How we will use the feedback received:

- Final CRMP Phase II products content (analysis, narrative, format)
- TAC Subcommittee Recommendations (especially funding)
- Approach to sharing the final products (open data downloads, locations of content on website)
- Messaging about the benefits of the plan

Subcommittee Discussion

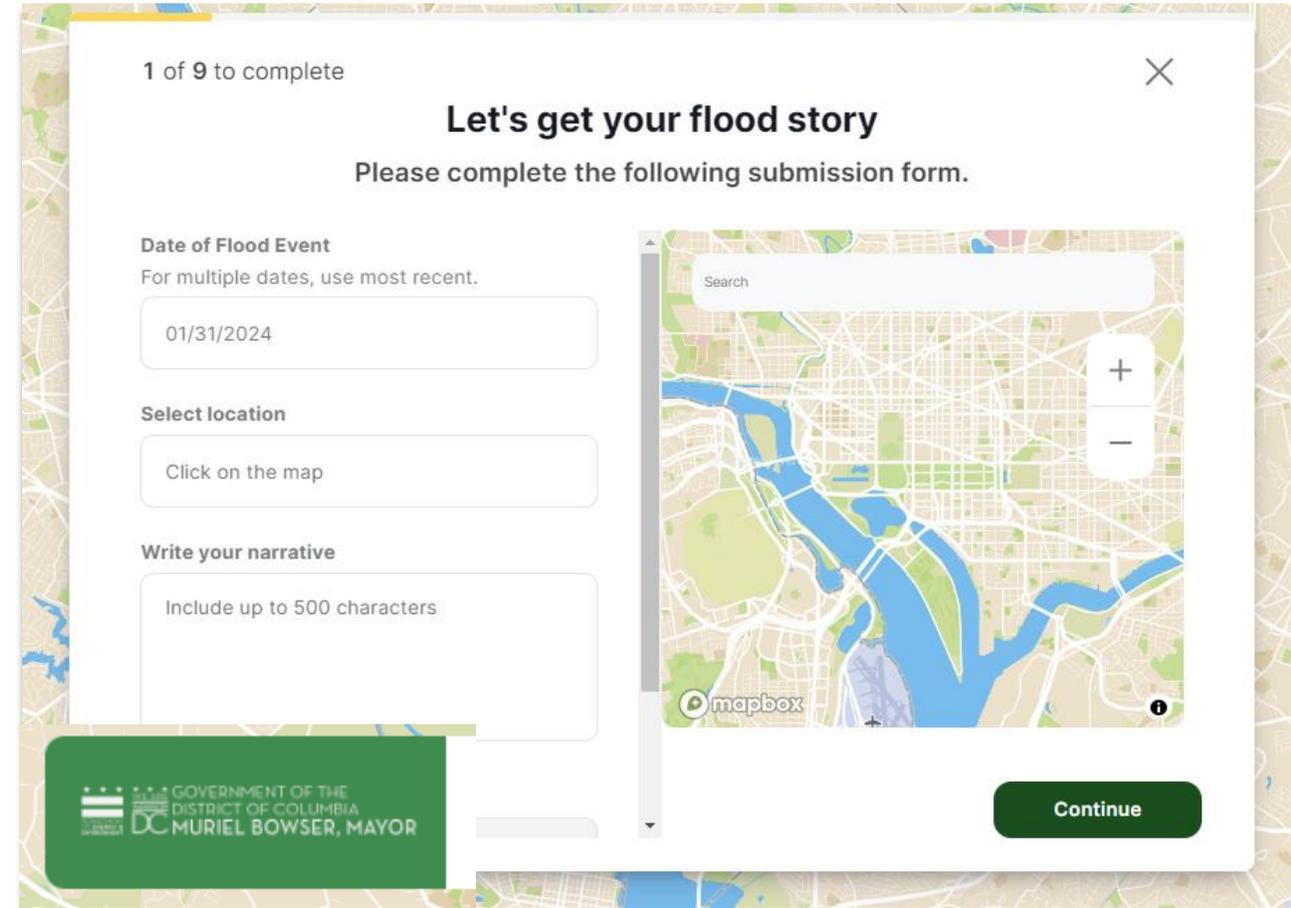
End-User Survey Feedback



VFRIS Flood Story App

Participatory Mapping Tool

- Publicly accessible online tool
- Survey 123 app format
- Entries will collect:
 - Date
 - Description
 - Type of flooding
 - Frequency of flooding
 - Impacts of flooding
 - Photos
- Will be reviewed by staff before being posted to view
- User testing completed



1 of 9 to complete

Let's get your flood story

Please complete the following submission form.

Date of Flood Event
For multiple dates, use most recent.

01/31/2024

Select location
Click on the map

Write your narrative
Include up to 500 characters

mapbox

Continue

GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

Locality Meetings

Presentations and Trainings

- Brief presentations / trainings for local government
- Share information about CRMP tools and upcoming activities
- Working with PDCs to organize via existing channels.
 - PlanRVA
 - NNPDC
 - GWRC
 - NVRC
 - MPPDC
 - ANPDC*

Workshops

- Meetings addressing specific local governments
- Share information about CRMP tools and upcoming activities
- Discuss flood resilience challenges and opportunities
- Criteria: relatively high flood risk and low Phase I engagement
- DCR to host/co-host meetings:
 - HRPDC: Franklin, Isle of Wight County, James City County, Poquoson
 - Crater PDC: all localities
 - PlanRVA: Chesterfield County, City of Richmond

**ANPDC meeting was requested to be held with elected officials. All other meetings will be held primarily with locality staff.*

Tribal Engagement

Presented to EPA Regional Tribal meeting on February 12th.

Explored the following topics:

- Update on CRMP, Phase II
- Request for input on impact assessment
- Would additional engagement opportunities be of interest?
- If so, what format would work best?

Continuing to look for partnership opportunities for additional engagement.

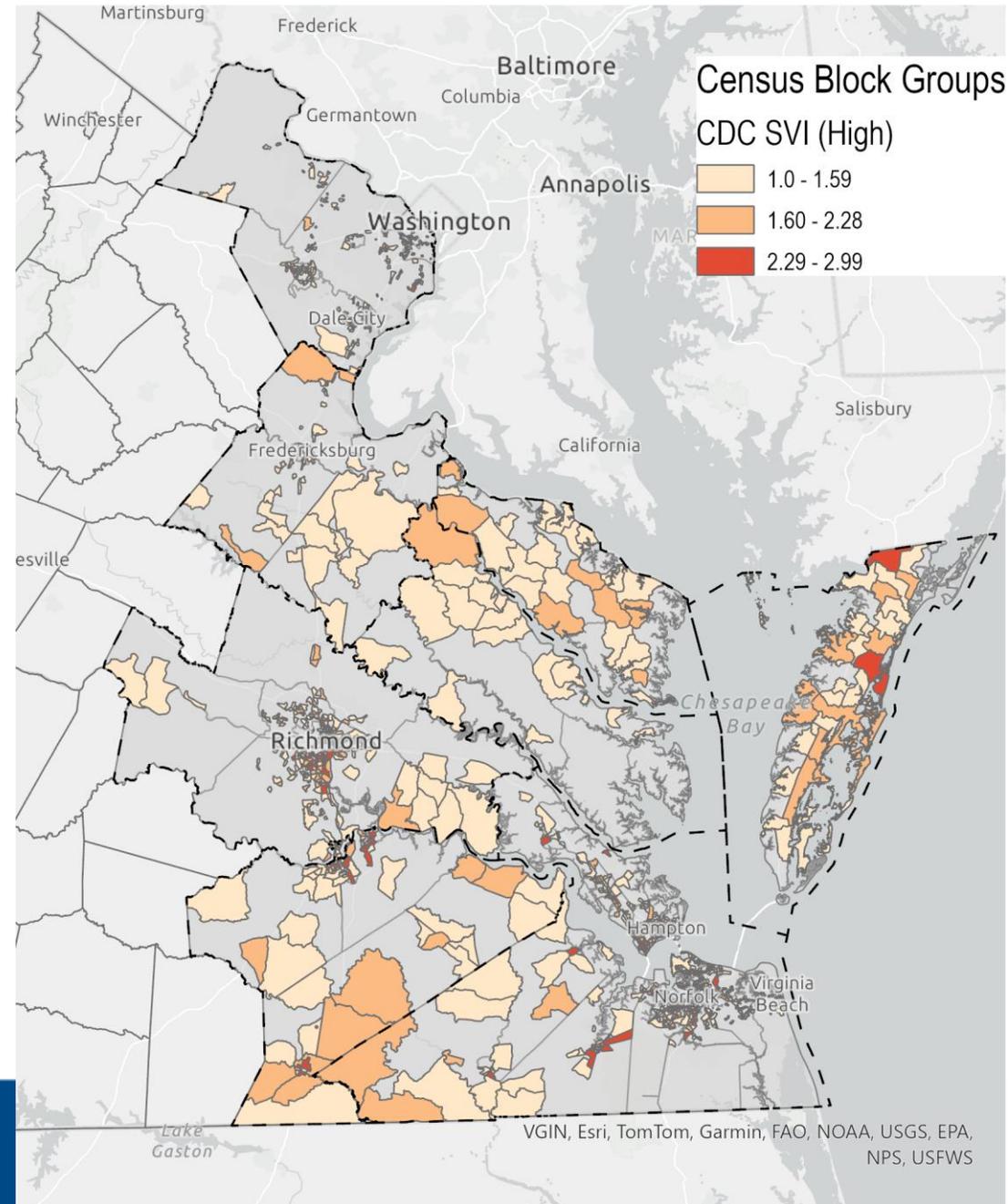
Underserved Community Meetings

Identifying underserved communities at risk of flooding.

Identifying CBOs serving / representing underserved communities with an interest in flood resilience.

“Underserved Communities are geographic or demographic communities that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, or are environmentally overburdened.”

- Community Flood Preparedness Fund Manual



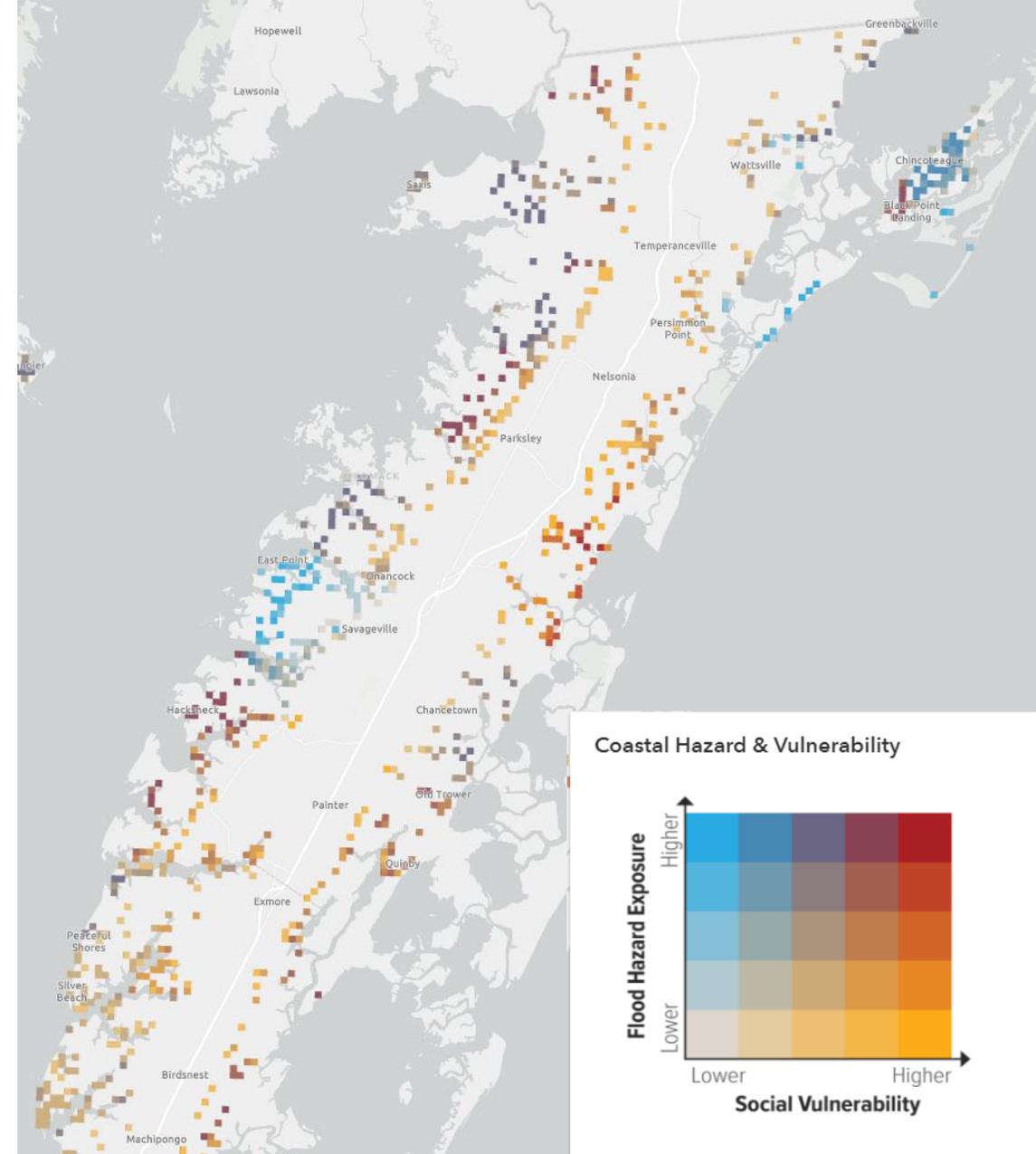
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- Community Flood Preparedness Fund Manual



Resilience User Portal & Data Call

Collecting Projects & Initiatives Data

August 2021: Initial Development

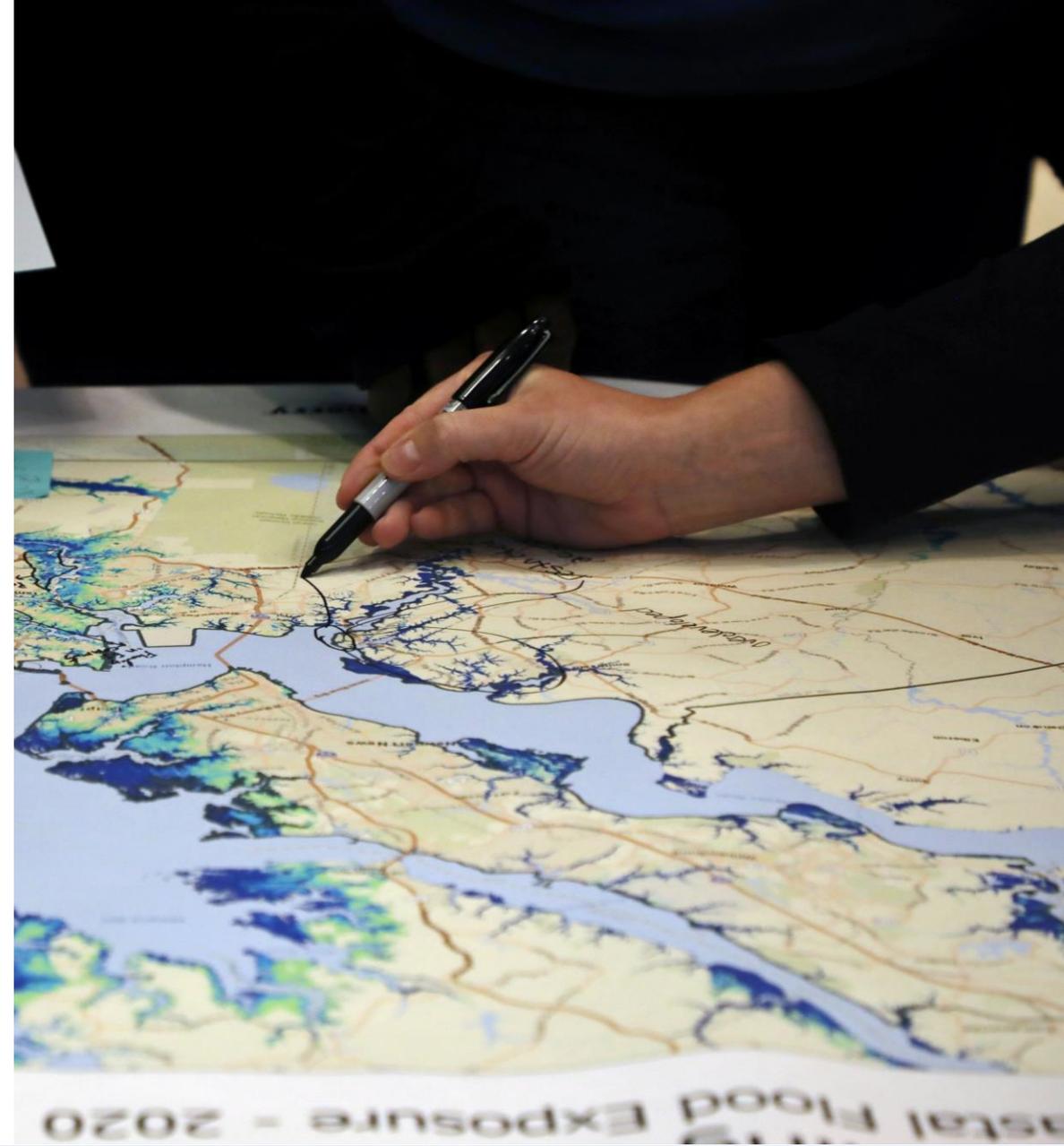
- CRMP Phase I Plan

August 2023: Second Bulk Upload

- Six of the 8 PDCs submitted updates

September 2023: User Portal Launch

- Currently 11 registered users

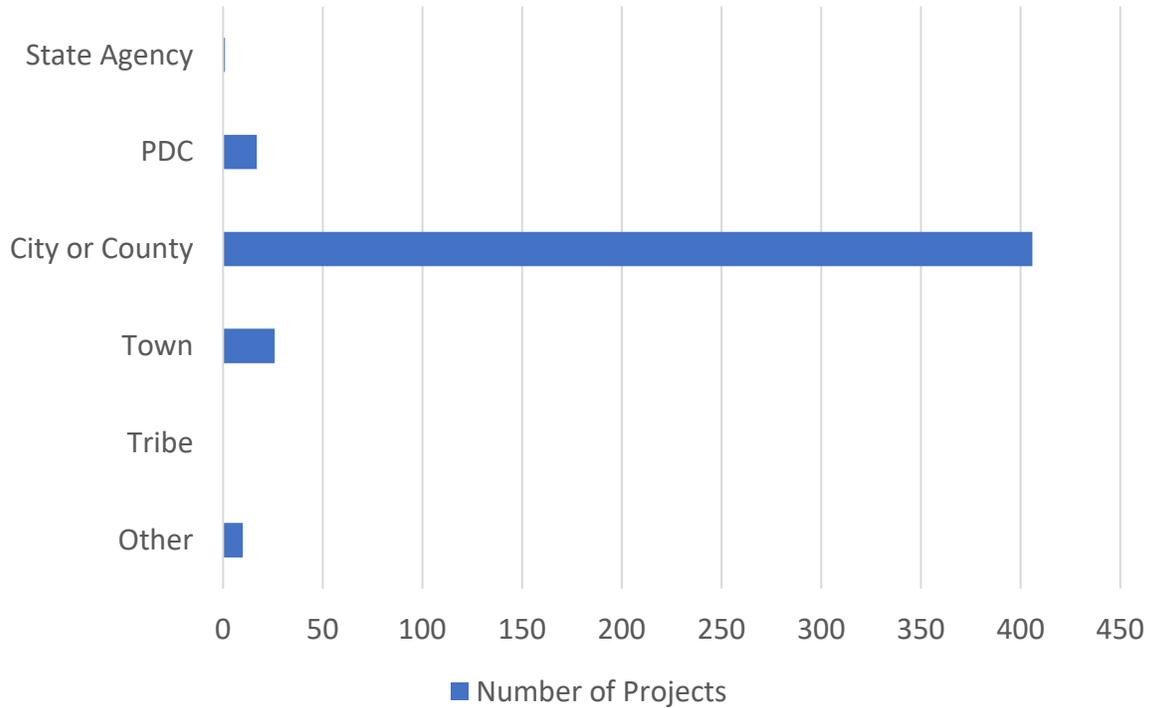


Projects & Initiatives Inventory Purpose

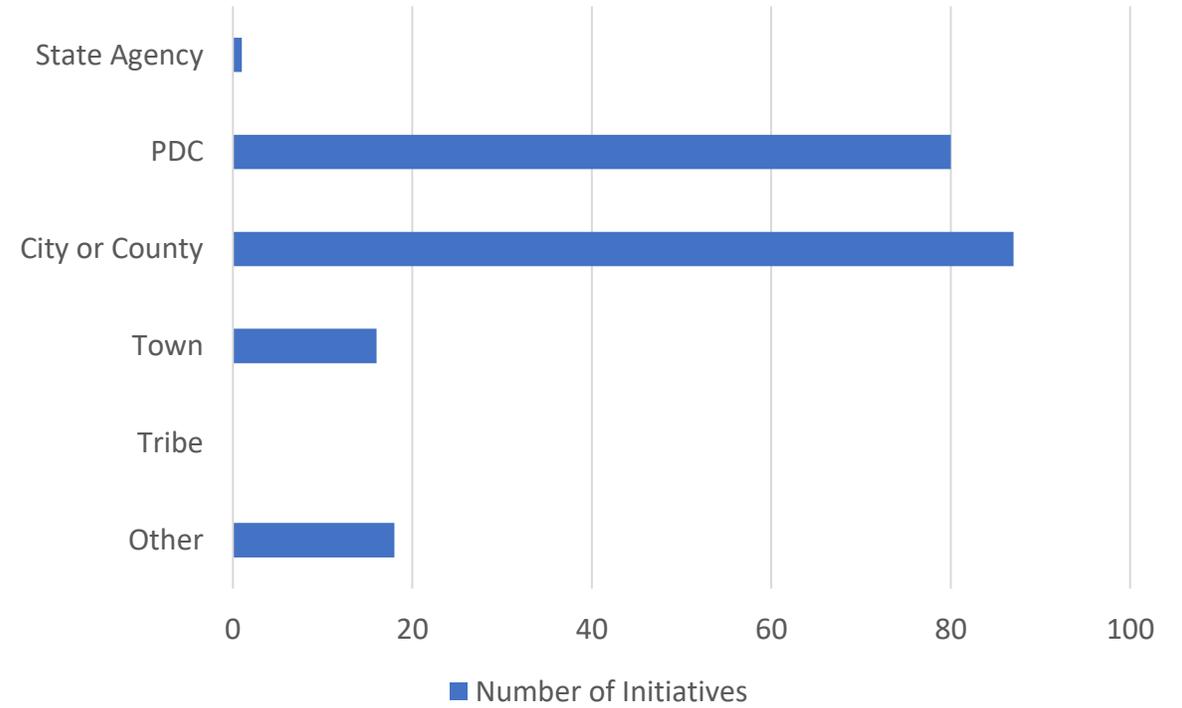
- ✓ Take account of Virginia's flood resilience financial needs, trends, and gaps.
- ✓ Support regional knowledge sharing and collaboration.
- ✓ Showcase organizational flood resilience priorities and accomplishments.
 - May assist with funding applications.
- ✓ Provide automatic matching of projects with funding opportunities.
- ✓ Satisfy code requirements.

Projects & Initiatives Update

Number of Projects in the Web Explorer

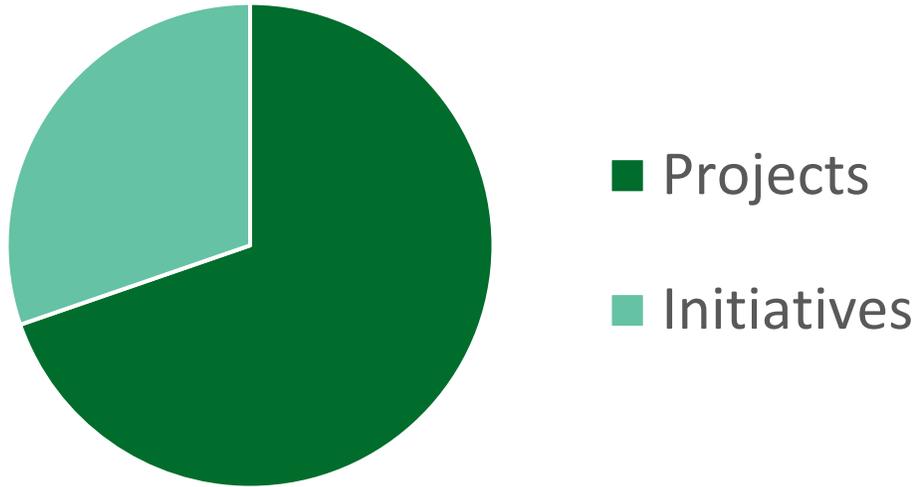


Number of Initiatives in the Web Explorer



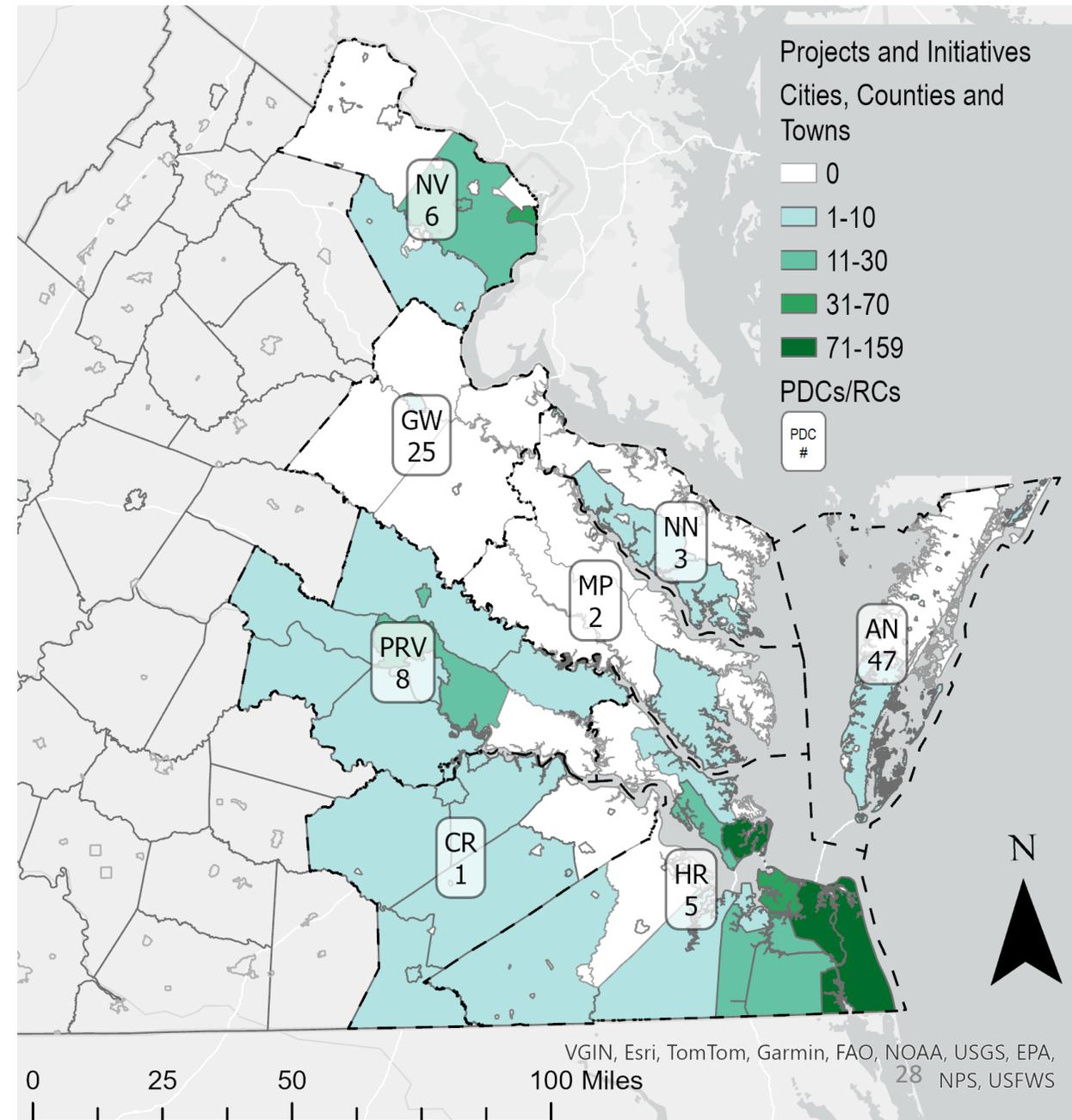
Projects & Initiatives Update

Total Actions in the Explorer: 660



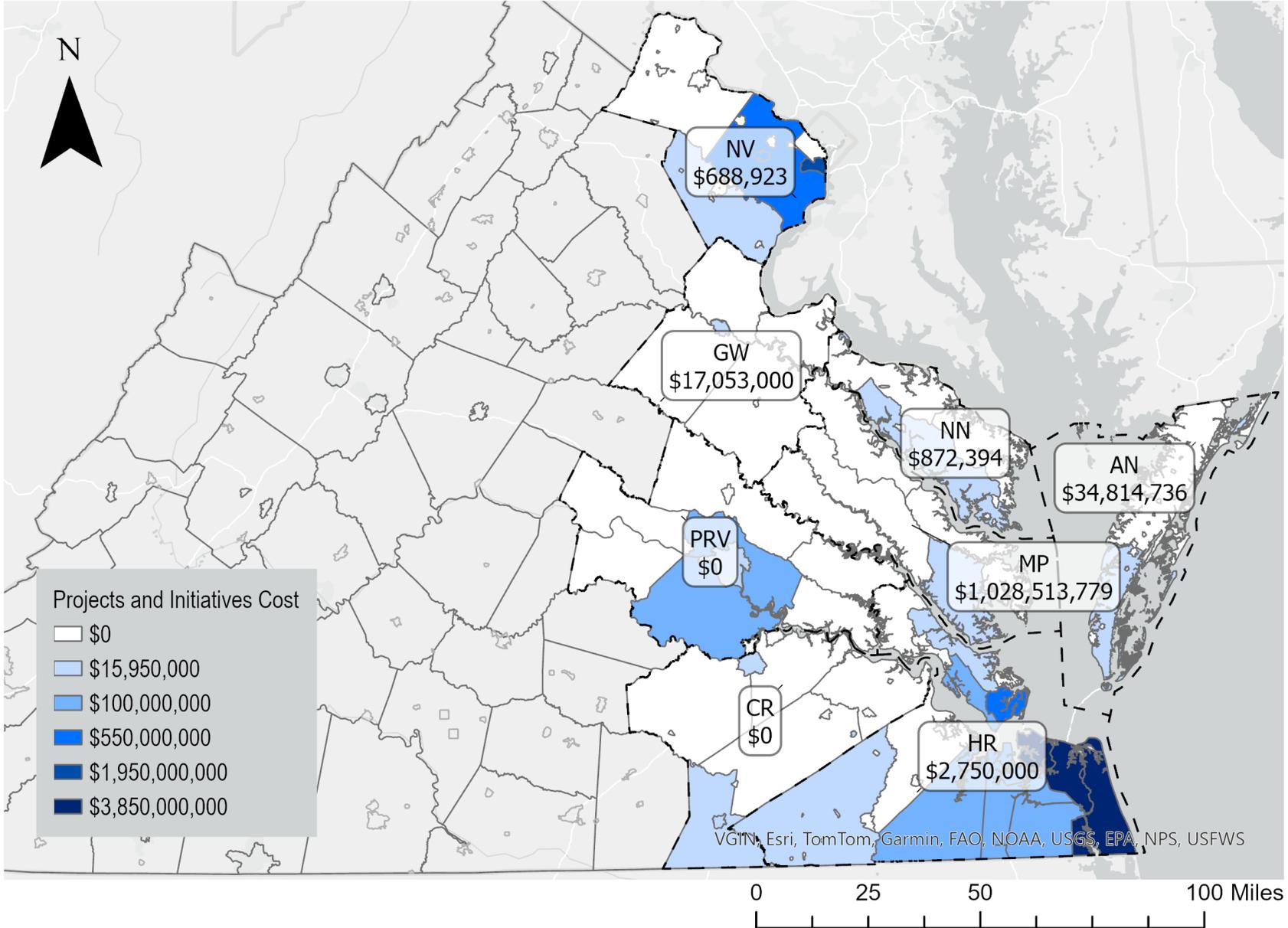
No changes have been made to the original batch of projects and initiatives uploaded in 2021.

Number of Local Government Projects and Initiatives Appearing in the Coastal Resilience Web Explorer as of December 30, 2023



Cost of Local Government Projects and Initiatives

Appearing in the Coastal Resilience Web Explorer as of December 30, 2023



Total Cost: \$8.37 Billion

- State agency: \$800,000
- PDC: \$1.08 Billion
- City or County: \$7.21 Billion
- Town: \$13.89 Million
- Tribe: \$0
- Other: \$61.23 Million

Considerations:

- Some projects are significantly more complex and costly than others.
- Many projects and initiatives are missing implementation costs.

Next Steps in 2024

March-June: Technical Assistance

- New contractor will provide ongoing assistance in response to owner requests.
- April 1 deadline to submit projects or request assistance.

April: Further Analysis of Submissions & Outline of Report Section

- New contractor will present findings at Q2 project prioritization subcommittee meeting.

May-September: Content Development, to include:

- Clean data, fill data gaps
- Mockup Coastal Resilience Web Explorer (include projects & initiatives updates)
- Develop summary products for final report

Subcommittee Discussion

Outreach and Engagement Strategy Updates



Outreach and Engagement Activities

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New Business

Recommendations for Future Planning
Subcommittee Discussion



Phase I TAC Recommendations – O&E

The efforts to conduct local government and public input outreach through the PDCs was a sound strategy.

We would offer the following alterations to that strategy moving forward.

- **Further integrate the data collection efforts with the outreach meetings.**
- Allow for more time and provide greater opportunity to complete the data collection/outreach campaign to local governments and stakeholders.
- Be specific in your requests for data and the **stated goals of meetings.**
- Conducting public outreach through the PDCs was not as effective because PDC are not typically public-facing organizations and have to walk a line with their member local governments. This outreach is better conducted by the Outreach Subcommittee through a more targeted approach. **Find out where the gaps in input are and target those communities through community-based organizations.**
- Utilize **more press, media, and social media** to get the word out about the campaign.

Phase I TAC Recommendations – O&E

- It is the role of the Outreach Subcommittee to help identify which stakeholders to engage, this begins by having a diverse and inclusive membership.
- The NNPDC role and capacity, and PDCs in general, are as facilitators, conveners, local government liaisons, and planners.
- The Outreach Subcommittee should be the origin for all insight into how to conduct outreach going forward. It felt at times like there were two outreach efforts.

Subcommittee Recommendations

Steps for our next meetings

- Understand our strengths and weaknesses.
- Identify and prioritize opportunities.
- Organize opportunities into recommendations.
- Present background, justification, details for identified recommendations.



CRMP Outreach & Coordination

Strengths

- What's working well?

Weaknesses

- What can be improved?

Opportunities

- What resources can we use to improve?

Threats

- What changes or factors might influence future success?



Subcommittee Discussion

Recommendations for Future Planning

Other Topics



Public Comment

If you seek to provide public comment, please sign up either in-person or virtually using the Chat window.



Action Items, Scheduling

- Action Item Review
- Full TAC Meeting on March 13, 2024
- Quarter 2 Subcommittee Meeting
 - Outreach & Engagement Updates
 - Recommendations for Future Planning

Homework! Please review the Phase I Recommendations handout and End-User Survey Results Summary prior to our next meeting.

CONTRACT NO. E194-89627

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VIRGINIA COASTAL RESILIENCE MASTER PLAN END USER SURVEY – RESULTS SUMMARY

Virginia Coastal Resilience Master Plan, Phase 2

JANUARY 22, 2024



SUBMITTED BY

Dewberry Engineers Inc.
8401 Arlington Boulevard
Fairfax, Virginia 22031

SUBMITTED TO

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Office of Resilience Planning
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Richmond, Virginia, 23219

Document contains edits by DCR Office of Resilience Planning.

CONTENTS

OVERVIEW	1
SURVEY RESPONDENTS	1
SUMMARY OF KEY FINDINGS	1
Overall Feedback	2
Plan Document	2
Web Explorer & Data Download	3
Funding & Financing	3
DETAILED SURVEY RESPONSES	4
Product Use	4
Product Usefulness	5
Use Cases	8
Limitations	11
Desired Plan Content	12
Funding & Financing Experience	13
Funding Barriers	14
General Support Needs	16
Survey Respondents by Organization	18

Overview

This memorandum presents and interprets responses to the Virginia Coastal Resilience Master Plan (CRMP) End-User Survey that was conducted in December 2023 – January 2024. The purpose of the survey was to collect feedback from the plan’s intended end users to inform development of the data and products created during the Phase II plan update, due December 2024. This memo presents a summary of survey respondents, responses and key findings disaggregated by organization type, and key takeaways for Phase II development.

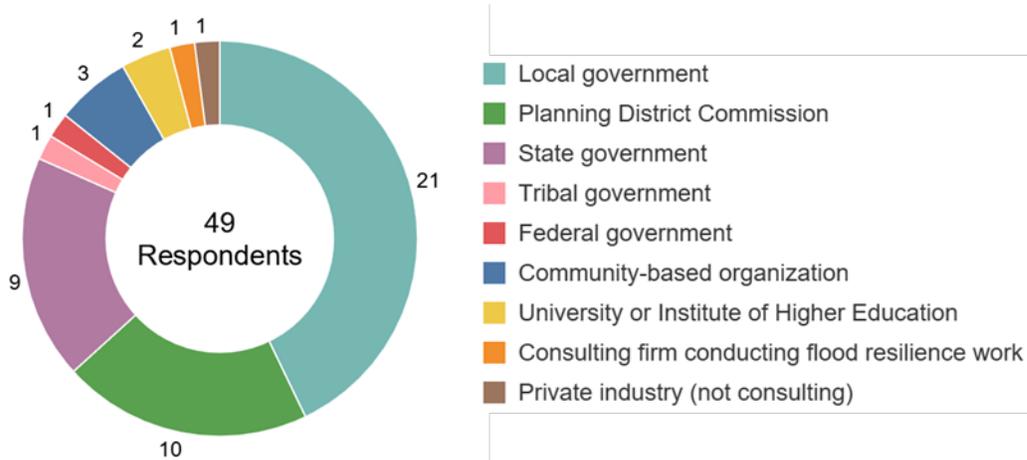
Survey Respondents

The survey had 49 total respondents, with the majority representing government agencies. Respondents represented:

- 18 Local governments
- 8 Planning District Commissions
- 8 State government agencies, departments, or divisions
- 9 other organizations, including tribal or federal governments, community-based organizations, universities, or private industry.

A summary of the respondents by organization type is provided below in Figure 1. A complete list of respondents by organization can be found at the end of this memorandum (Table 7, pages 18-19). Organization type is also used to classify responses to questions throughout the survey.

Figure 1. Count of survey respondents by employer type as indicated in the question “Please indicate which of the following best represents your employer’s primary function.”



Summary of Key Findings

Survey responses across all questions are consolidated into the below summary of key findings. This summary groups findings into feedback that is either: (1) relevant to the overall CRMP planning effort; (2) specific to the creation of the PDF document; (3) specific to the creation of the web-based services; or (4) funding-relevant findings relevant to work beyond the scope of the CRMP. Within each group, feedback is classified as either positive feedback, critique, or specific suggestion.

Overall Feedback

Of the 49 survey respondents, 40 (82%) reported actively using at least one of the CRMP products before filling out the survey.

Positive Feedback

- The CRMP products have previously been utilized for a wide variety of use cases, with the most popular being public education and awareness (11 responses), grant seeking (13), and plan development (12), and research (15).
- Products are helpful for providing an overview of resilience-related activities happening across the state, both top-down driven by the Commonwealth and bottom-up driven by communities.
- Products are useful for communicating to non-technical audiences, ranging from individual residents to elected officials.

Critiques

- The Phase I plan's focus on coastal flooding limits its applicability for communities that face significant interior flooding and leads to a potentially misleading narrative that more inland areas do not face flood risks.
- CRMP data products (including underlying sea-level rise scenarios and funding sources) can become outdated, and require regular update to ensure relevancy for use.
- Not all critical infrastructure (as identified by localities) and resilience-related projects are captured.

Specific Suggestions

- Incorporate revised sea level rise projections.
- Expand analysis and narrative to encompass other flooding types, including pluvial/rainfall-driven flooding, riverine flooding, and composite flood impacts.
- Conduct additional economic analysis to capture more impacts in terms of dollars. This will help communicate risks and importance of resilience investments to decision makers.
- Add contextual information about flood insurance coverage, and the insurance gap that needs to be addressed.
- Further integrate and align the plan with other state plans, including the HMP.
- Develop a scorecard and tracking on community outreach by localities and regions.
- Continue education and engagement efforts with localities to further resilience planning capacity.

Plan Document

32 survey respondents (65%) have used the PDF plan document.

Positive Feedback

- Clear communication and flow in the plan document, making it readable and easy to navigate.

Critiques

- Example projects are seemingly arbitrary and often do not address the most pressing regional resilience needs.
- Impacts are not framed in terms of economic losses, which would be more helpful for driving decisions.

Specific Suggestions

- Project sheets should be expanded and could be improved by including an icon to indicate project type and description or score to indicate population served.
- Include a narrative about coordination between state agencies and plans.
- Highlight case studies about how the plan and related products are being used.
- Expand content related to resilience-related economic development, job creation, and innovation.
- Place greater emphasis on natural infrastructure and incorporate biodiversity and ecological resilience.
- Include more specific actions to guide other state planning work.
- Improve tribal representation.

Web Explorer & Data Download

33 survey respondents (67%) have used the Web Explorer, while 16 (33%) have used the Portal Hub, and 4 (8%) have used the AWS data download options.

Positive Feedback

- Users found all elements of the web explorer useful, with the hazard information cited as being the most useful.

Critiques

- Web explorer can feel cluttered, hard to navigate, and overwhelming to users – there is almost too much information.
- Metadata and calculation methods are not clear in the web application, nor where to go to find that information.
- Not all data is available for download, and downloadable data can be hard to work with.

Specific Suggestions

- Include more context to explain the data, possibly through a pop-up function.
- Integrate more dynamic and user-friendly data download process, including:
 - Jurisdiction-specific impacts
 - Projects and initiatives
 - SLR models as a locally-storable raster rather than web service.
- Adding recommended citations in metadata would be helpful when referencing information in plans and grant applications.
- Improve and expand on the inventory of past, present, and future resilience work so that it is a more user-friendly and living database.

Funding & Financing

- Respondents have most experience seeking and winning federal and state grant funding sources.
- Barriers to engaging with funding include:
 - Lack of staff and staff capacity, both in terms of numbers and expertise.
 - Challenges related to funding caps and local match requirements.

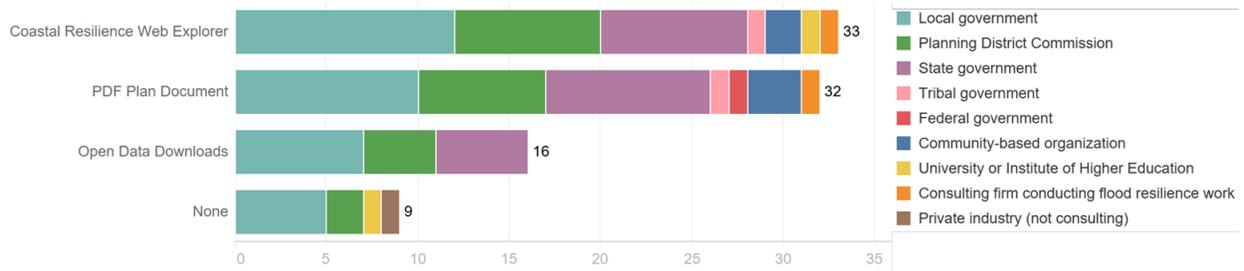
- Competitive landscape and meeting requirements related to benefit-cost and environmental justice metrics.
- Gaps in data hindering project design and grant applications.
- Lack of awareness about relevant grant opportunities and timelines.
- Issues with slow administration and lack of coordination between state and localities/tribes.
- Limited political will and prioritization of resilience across competing interests.
- There are many steps the Commonwealth can take to address these barriers. Most popular were offering training for local government staff, highlighting best practices and successful case studies, and offering resources for evaluating funding opportunities.

Detailed Survey Responses

Product Use

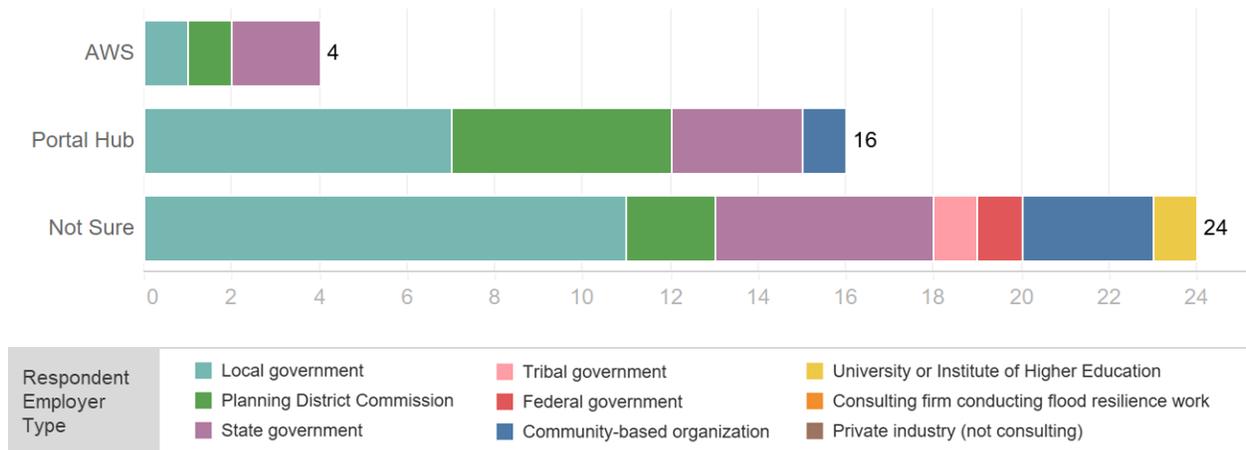
Respondents were asked which products they've used in their work, shown in Figure 2. 67% of respondents have used the Web Explorer while 65% of respondents have used the PDF Plan document. 18% of respondents had not yet used any of the Coastal Resilience Master Plan products in their work.

Figure 2. Responses to "Which of the Coastal Resilience Master Plan products have you used in your work?" broken down by organization type.



More specifically, respondents were asked if they had used the open data products through AWS or portal hub. Responses are shown in Figure 4.

Figure 3. Responses to "If you have downloaded open data, which of the two Coastal Resilience Open Data Portals have you used?" broken down by organization type.



Product Usefulness

When asked about the usefulness of each product, the majority of respondents said all three products were either somewhat or extremely useful, as shown in Figure 4. and Figure 5.

Figure 4. Responses to “Please rank the overall usefulness of the Coastal Resilience Master Plan products.”

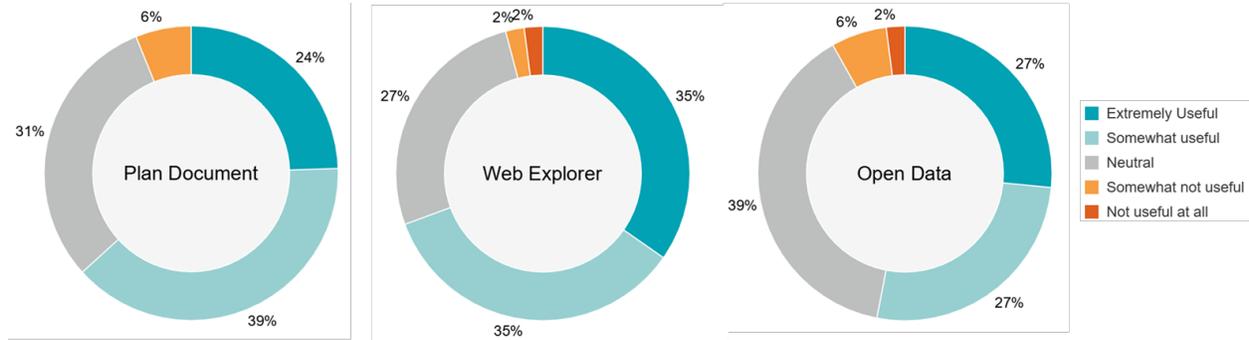
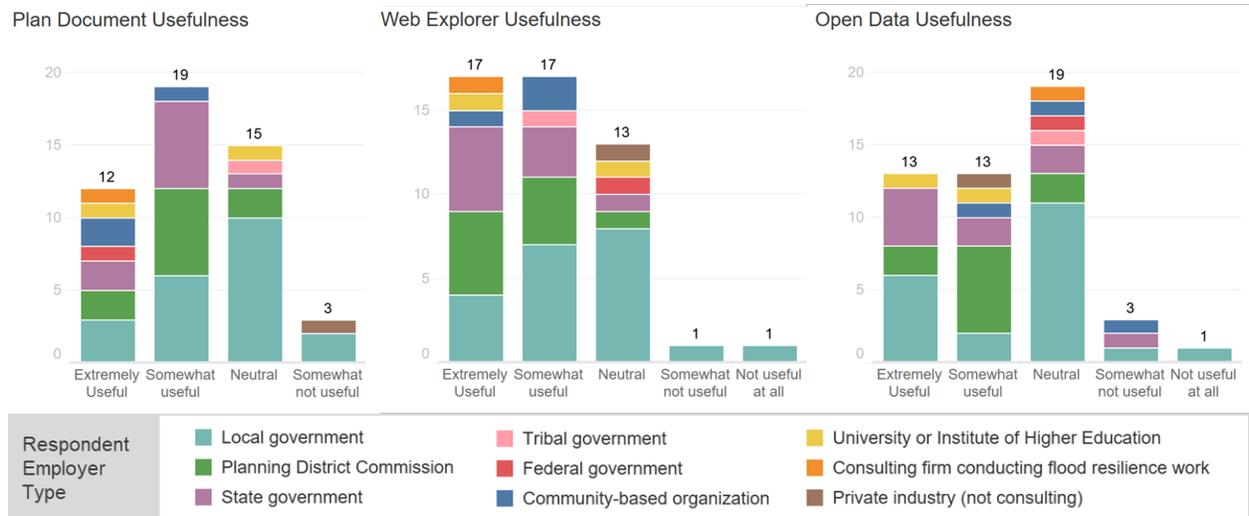


Figure 5. Responses to “Please rank the overall usefulness of the Coastal Resilience Master Plan products” broken down by organization type.



More specifically, respondents were asked to reflect on the usefulness of the Web Explorer tabs and responses are presented in Figure 6 and Figure 7.

Figure 6. Responses to “Please rank the usefulness of the Coastal Resilience Web Explorer tools.”

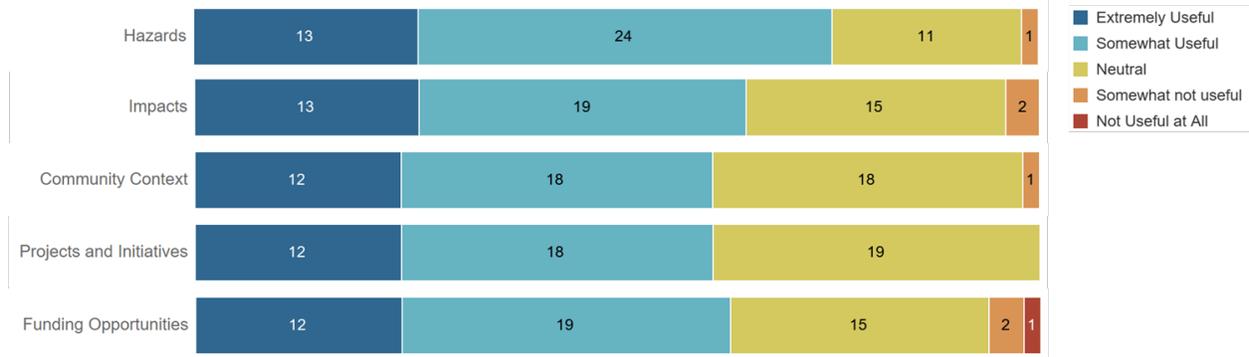
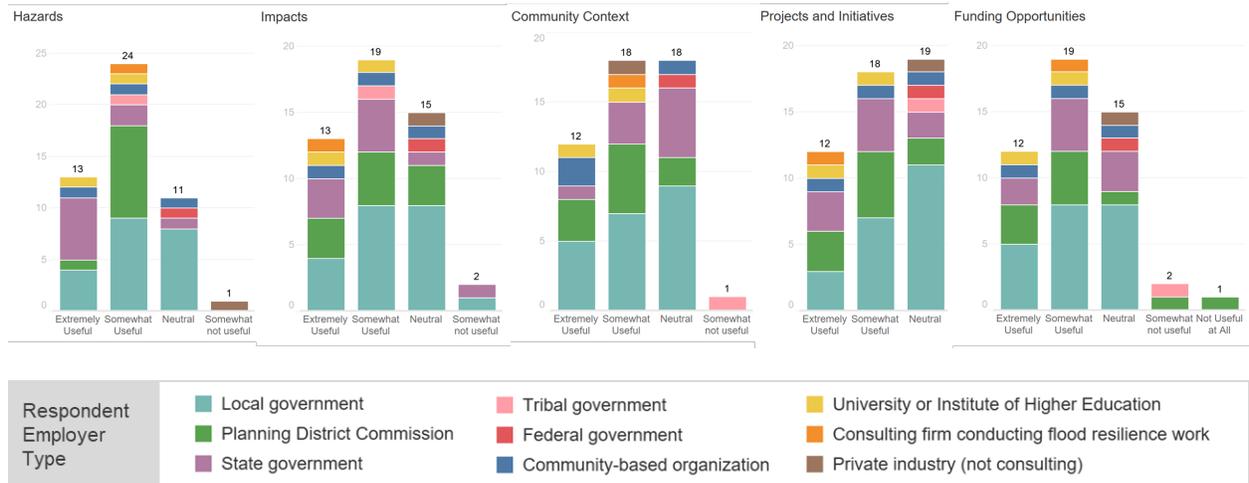


Figure 7. Responses to “Please rank the usefulness of the Coastal Resilience Web Explorer tools.” broken down by organization type.



Respondents provided additional comments regarding product usefulness, described in Table 1.

Table 1. Responses to “Please provide any comments regarding the usefulness of the Coastal Resilience Master Plan products.” Responses that were left blank or indicated a simple “no” or “not applicable” are excluded.

ORG TYPE	RESPONSE
Local government	The updated Energy and Climate Change Action Plan (May 2023) utilized the Coastal Resilience Master Plan: https://www.alexandriava.gov/energy/energy-and-climate-change-action-plan . The City plans to develop a Flood Resilience Plan in 2024 and will utilize all products as we discuss updates to policy and programs understanding what is happening across the state is incredibly valuable. I'm not sure how the products were or were not used for the City's Waterfront Mitigation Program.
	Current plan is too focused. As a coastal community we face many types of flooding.
	Articulated very clearly. Clear format and flow, very readable and easy to navigate to find everything I'm looking for.
	The social vulnerability index map has been useful when social vulnerability is a criteria for grants.

ORG TYPE	RESPONSE
	<p>I am grateful for the staff that produced the Coastal Resilience Master Plan.</p> <p>These products should prove helpful</p> <p>Information from this plan will be utilized in PWC's upcoming development of a PWC Flood Resilience Plan.</p> <p>Southampton County is a considerable distance from the coast, so the usefulness of the Plan hasn't been determined.</p> <p>I really like the mapping products. As we implement our MS-4 program it will be good to know what areas of Spotsylvania are most at risk for climate impacts.</p> <p>I've used these products to discuss resilience resources and goals with elected officials.</p> <p>I don't know that I've had the need to use the coastal resilience master plan.</p>
<p>Planning District Commission</p>	<p>Coastal Resilience Web: Funding Opportunity update would be useful. Lack of downloadable Impact data. The data that is downloadable is difficult to parse and navigate. Most ESVA projects are initiated at the local town level - specific impacts on especially prone towns and jurisdictions would be useful.</p> <p>PDF Plan Document: Example projects are seemingly arbitrary and often do not address the most pressing regional resilience needs. Impacts on Community Resources, Critical Sectors, and Natural Infrastructure except Annual Structure Losses not put into dollar amounts - info that local stakeholders and decision-makers use to make determinations.</p> <p>Open Data Downloads: Dynamic Mapping would help with utilization.</p> <p>They are needed guidance in our own resilience planning.</p> <p>The primary benefit of the pdf is that it provides a solid overview of the context and history of the Commonwealth's planning efforts while also providing a narrative of what we are trying to accomplish. Static maps are nice and easy to read, but they can quickly become outdated.</p> <p>The web explorer is almost too much information. It's not clear how the "composite" impacts are calculated, and directing someone to the plan without a link is unhelpful. The project tab is very cluttered.</p> <p>The open data downloads are great to have, but the datasets themselves are not particularly useful.</p> <p>There are some nice graphics and statistics. But we don't come back to these products much.</p> <p>Its usefulness relates to either a public policy issue where we need context/data or if a grant funder requires certain data, maps, or narrative which the plan can assist with. We know the Master Plan is a good document, how we use it is driven by policy or \$</p> <p>Since I am rather new to my position, I haven't had a lot of opportunities to utilize the CRMP products in any real-world scenarios. However, from what I have been able to see of the products, I can see how they would be of use in planning for resilience in our area. I think that it helps to see what areas are most at risk when planning ahead since it costs less to be proactive rather than reactive to potential risks.</p> <p>I found the print/PDF master plan product to be easily digestible. Having started my current position after the Master plan Phase I was completed, I thought it was really helpful to understand the foundations of resilience planning progress for the Commonwealth and to get a sense of the direction for future efforts.</p>
<p>State government</p>	<p>The future inundation products were very useful for assessing the resilience of natural heritage resources and protected lands in the coastal zone of Virginia.</p> <p>The products provide great historical data.</p> <p>The PDF was useful for someone who is new coming into this field. It gave a good lay of the landscape.</p> <p>The web explorer has been helpful for visualizing and exploring the data. Especially for someone new to all of</p>

ORG TYPE	RESPONSE
	<p>this.</p> <p>We've also used the map services in a mapping tool we've been using on the Eastern Shore to identify future impacted communities.</p> <p>In using the plan, data download, and tools for grant writing and other technical reporting, it would be great to have recommended citations for each. For example, DCR is using the 2080 SLR projections in our planning and related grant proposals. The data comes from NOAA, but it's housed in Open Data Downloads. Having a recommended citation in the metadata, or ArcGIS Online landing page, would alleviate some ambiguity, i.e., should NOAA be the citation for the SLR map service or is it DCR, another entity?</p> <p>PDF Plan Document lists TAC recommendations, needs for improvement, and other locality/regional information not provided elsewhere. CRWE provides tabular summary at the locality scale and very local mapping impacts</p> <p>At VDEM there is some commonalities in the FEMA required hazard mitigation plans (state and local). The PDF document provides the references - where we can incorporate those findings into future hazard identification and risk assessments. FEMA requires the best available data. The better integrated these planning processes, the more useful these products will be for grant making decisions at our agency. It is challenging to set funding priorities from two different planning efforts, so alignment is key. The Coastal Resilience Web Explorer is helpful to get a quick glance at flood hazards, and social vulnerabilities.</p> <p>Provides good insights to coastal flooding exposure of transportation infrastructure. Provides good information on planned transportation related resilience improvements.</p> <p>I have not used the web explorer hence the answer to #7. Most design effort at the port is handled by consulting services.</p>
Tribal government	<p>I know the document would be really useful and I have had a chance to read some of it, but because of limited capacity, I have not been able to dedicate time to reading the whole document, and so I have not been able to fully take advantage of all of the information it has to offer.</p>
Other	<p>Key core resource for developing crucial Coastal Community on-community Community Action Plans to implement and actualize positioning for funding opportunities that are direct Shoreline and unique Riverine based Communities.</p> <p>Used data tables from plan document to supplement sea level rise risk and vulnerability info in 2 regional hazard mitigation plans, as well as the State HMP.</p> <p>Data driven information useful for grant writing and assessment of integrated services to broker and deliver.</p>

Use Cases

Respondents were asked how they have used or would apply the products to their work across nine potential use cases. Across all respondents, there was the greatest interest in using the products in the future for public education and awareness (31), grant seeking (26), and plan development (27). The top use cases for the products to date have been research (15), grant seeking (13), plan development (12), and public education and awareness (11).

- **Localities and PDCs** are particularly interested in using for public education and awareness, plan development, and grant seeking.
- **State government respondents** were most interested in public education and awareness, program/operational decisions, and research.

A breakdown of responses is shown in Figure 8 and Figure 9.

Figure 8. Responses to “Consider the following potential use cases of the Coastal Resilience Master Plan products. Which of the following responses best reflect how you use the plan in your work?”

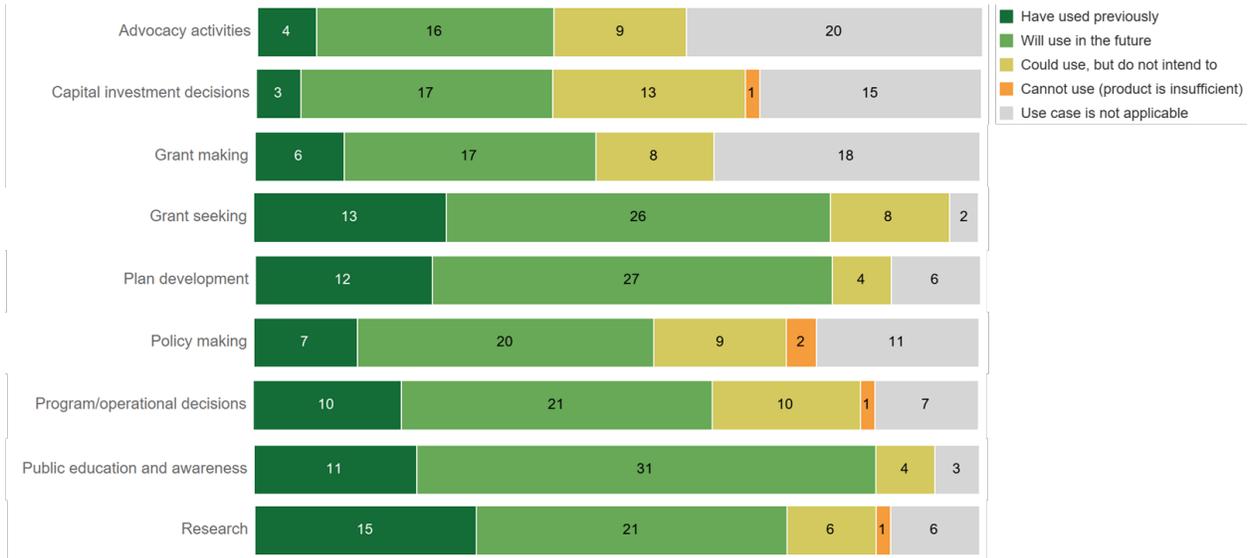
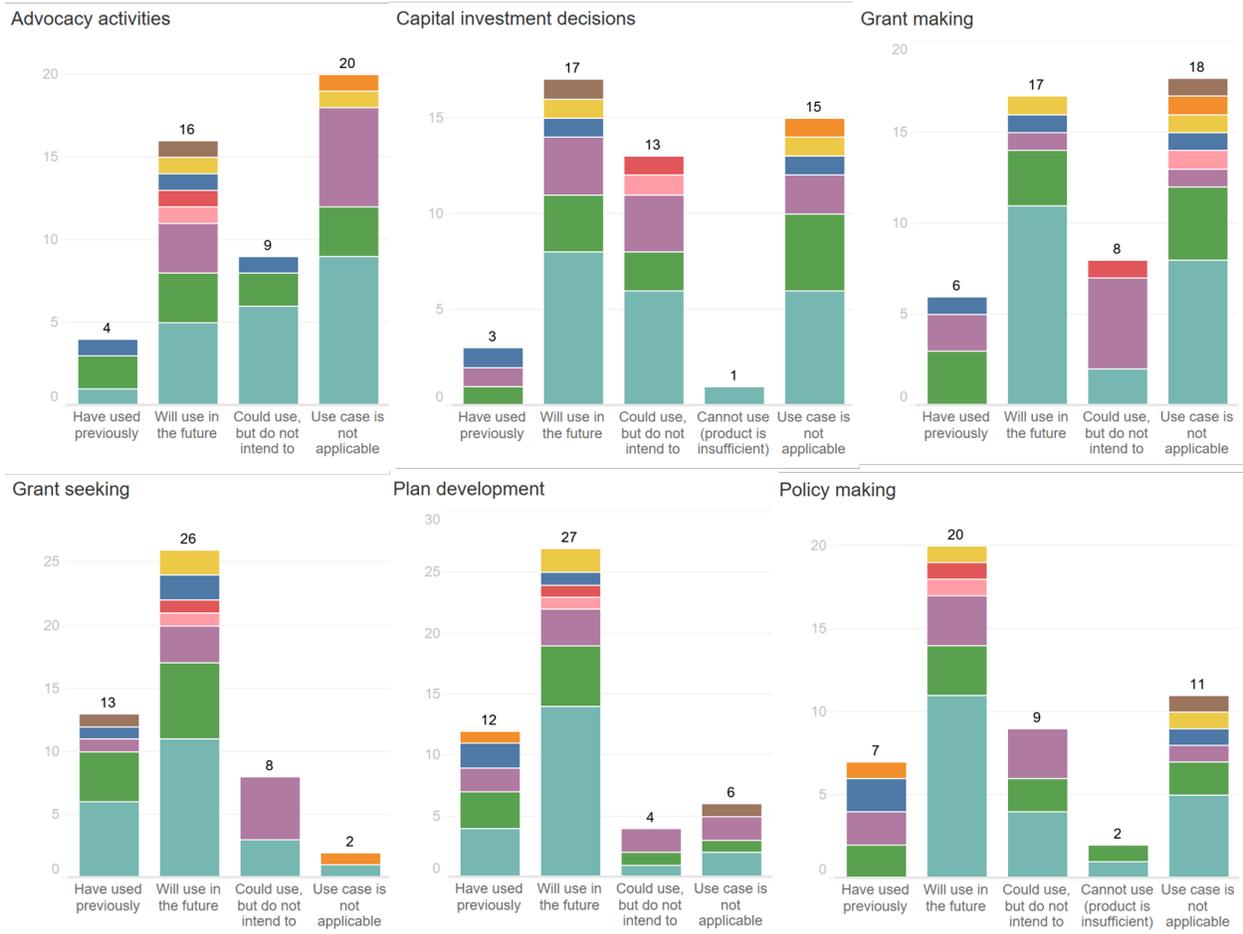
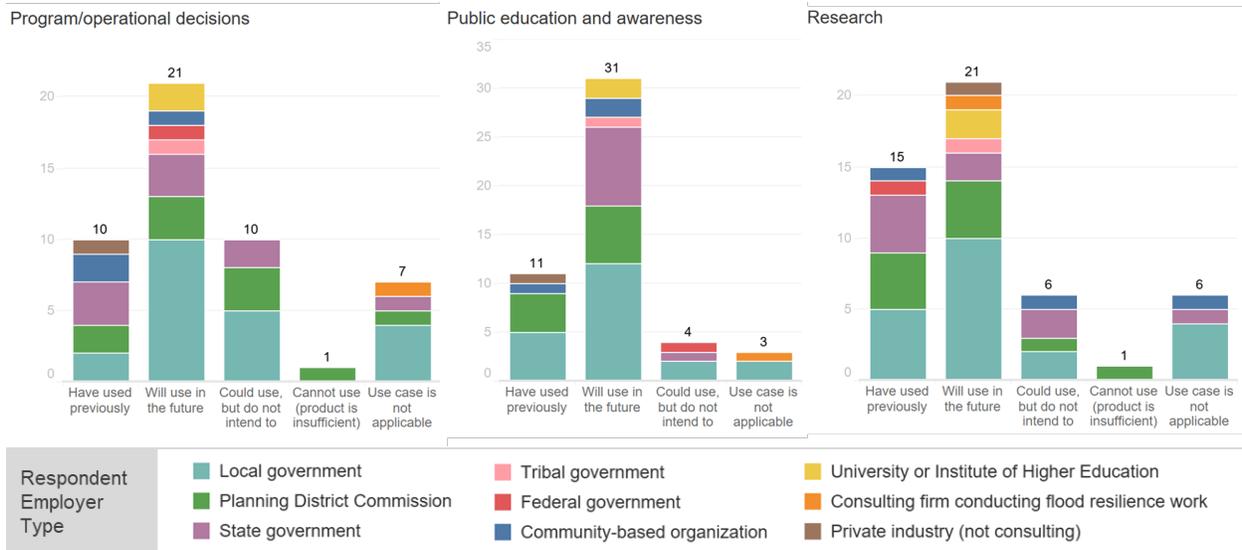


Figure 9. Responses to “Consider the following potential use cases of the Coastal Resilience Master Plan products. Which of the following responses best reflect how you use the plan in your work?” broken down by organization type.





To complement the nine use cases presented above, respondents were also asked if they had used the products in other ways. Through this open-ended question, respondents generally provided more detailed information on the ways they have used products for planning and grant application development.

Table 2. Responses to “Have you used the Coastal Resilience Master Plan products in other ways? If so, please describe the product and its applications.” Responses that were left blank or indicated a simple “no” or “not applicable” are excluded.

ORG TYPE	RESPONSE
Local government	Our consultant has used the data for our own master planning effort.
	To build educational and outreach materials.
	We have used it to determine social vulnerability for grant applications.
	I have used it to inform property owners of potential for sea level rise at or near their property.
Planning District Commission	Used as a base or point of reference for other tools and products.
	I have embedded them in our website.
	We refer to the master plan when giving presentations or briefings, usually in the context of being consistent with our own regional policies.
	Its driven by the question and how best to answer such question either qualitative or quantitative
State government	I have used the CRMP products as a way to understand the region that I now work in and the potential risks that it faces. It has helped me to get a better idea of what issues I am working with and what areas may need the most focus for resilience projects.
	We used the future inundation products to assess the resilience of natural heritage resources and protected lands in the coastal zone of Virginia.
	Mentioned above, we used the map service from the data portal to identify future impacted communities. We are using that information to design a community project on the Eastern Shore around flooding impacts.
	None other than already mentioned, we look at grant projects that are funded by FEMA that were identified in the plan.
Other	Community Action Plan partnership

Limitations

Respondents were asked about the limitations they have encountered when using the CRMP materials and responses are presented in Table 3.

Table 1. Responses to “Have you encountered any limitations in the plan's products that have prevented you from using them how you would like? If so, please describe the product and its limitations” broken down by organization type. Responses that were left blank or indicated a simple “no” or “not applicable” are excluded.

ORG TYPE	RESPONSE
Local government	Focus is too limited for all the climate change/flooding issues localities face. In addition, we have developed our own City-specific and more focused materials and evaluations.
	The example project sheets need an icon or indicator for the project type (ex. for structural projects, is the example a flood risk reduction measure, a structural shoreline stabilization, or community infrastructure). See pg. 180-181.
	I have used them despite limitations and just have caveats added to my product.
	We have a small town, but we have critical infrastructure that will be inundated during a 100-yr flood event. Don't see this info on the map.
	Already answered that I have not used the products.
Planning District Commission	Coastal Resilience Web: Funding Opportunity update would be useful. Lack of downloadable Impact data. The data that is downloadable is difficult to parse and navigate. Most ESVA projects are initiated at the local town level - specific impacts on especially prone towns and jurisdictions would be useful.
	PDF Plan Document: Example projects are seemingly arbitrary and often do not address the most pressing regional resilience needs. Impacts on Community Resources, Critical Sectors, and Natural Infrastructure except Annual Structure Losses not put into dollar amounts - info that local stakeholders and decision-makers use to make determinations.
	Open Data Downloads: Dynamic Mapping would help with utilization.
	The Resilience Web Explorer is not linked everywhere it should be across State Agencies and so it can be difficult to find.
	It doesn't consider rain driven flooding and the associated stormwater projects. It doesn't layout enough implementation strategies to drive state budget discussions and priorities (compared to state programs other than resiliency).
	The scenarios for hazards do not really correspond to local or regional planning scenarios or timelines. (e.g. 2020/2040/etc. vs twenty-five years, thirty years).
	I have not encountered limitations in its use. However, as part of the project prioritization committee for phase II, we have discussed how more information/data could be useful.
	Any limitations are being addressed through phase 2, i.e. precipitation impacts as a key component to coastal resilience in the region.
	On the web explorer, I really want to click on map shading to see a popup that explains the underlying data. Also, the data available for the Projects and Initiatives is almost non-existent, making that page not so useful.
State government	Not really, but I/we've used them at a very high level.
	Much of my work with the plan and related data includes GIS analysis. The current format of the SLR models (web map service) limits our ability to analyze the spatial data. Having these data available as rasters that can be locally stored and analyzed with typical GIS processing abilities would improve efficiency and produce better results.

ORG TYPE	RESPONSE
	Limited to coastal flooding. We are looking at statewide flooding.
Other	Access/Awareness/Communication/Inclusion

Desired Plan Content

Respondents were asked to reflect more specifically on the PDF plan document and what content they would like to see in a future revision. Responses are presented in Table 4.

Table 2. Responses to “What content would you most like to see included in future PDF plan documents?” broken down by organization type. Responses that were left blank or indicated a simple “no” or “not applicable” are excluded.

ORG TYPE	RESPONSE
Local government	We would benefit by more in depth info on pluvial flooding in coastal zones. It sounds like this will be explored more in future versions.
	rainfall data, urban flooding issues
	More project sheets, with a EJ lens/score on sheet, plus population served/protected.
	I'm new here, so I really don't feel qualified to make a recommendation.
	I would like to see information about storm surge flooding
Planning District Commission	Specific impacts on especially prone towns and jurisdictions. Dollar amounts on flooding impacts.
	Drainage issues
	Revised sea level rise projections. Narrative about coordination between state agencies and plans. Case studies of how the plan is being used.
	Expand sections on water management economic development, job creation, innovation being developed in Virginia
	It may be helpful to know what percentage of homes and businesses have flood insurance within each area identified for coastal flood exposure. There are Land Acres Exposed and Buildings Exposed with High Tide and Extreme Flood for both 2020 and 2080 with the percent change, but knowing the extent of insurance and how many will need it would be nice.
State government	Greater emphasis on natural infrastructure.
	Data currency
	An inventory of past, present, and future resilience work in the Coastal Zone. It's too easy to reinvent the wheel and documenting this work somewhere that is searchable and living would be a huge value add.
	recommended citation and more specific actions for land conservation and conservation planning. Incorporation of biodiversity priorities and ecological resilience
	No recommendations, however I would like to request an overview of the plan and web based products to our agency. We have a wide range of divisions and programs that may find these products useful.
	Pluvial and fluvial impacts. Composite flooding impacts.
Tribal government	I would really like to see something mentioned about the Tribes in Virginia. I think it is important that a state-wide planning document have at least some reference to how Tribes experience coastal resilience issues in the larger context of the surrounding community, and the state in general.
Other	Scorecard on Community Outreach by Local and Regional levels

Funding & Financing Experience

Separate from the CRMP materials, respondents were also asked about their experience seeking and using funding and financing mechanisms to implement resilience activities. Responses are presented in Figure 10 and Figure 11.

Figure 10. Responses to “What types of financing have you *successfully used* to fund your flood resilience activities (projects, staffing, initiatives, planning, etc.)?” broken down by organization type.

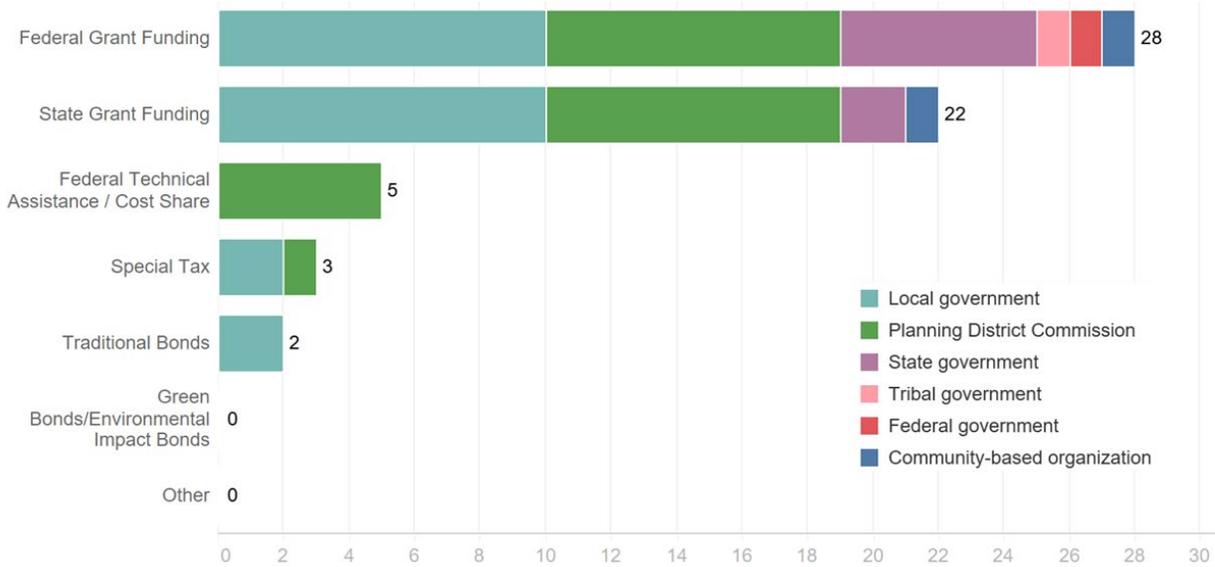
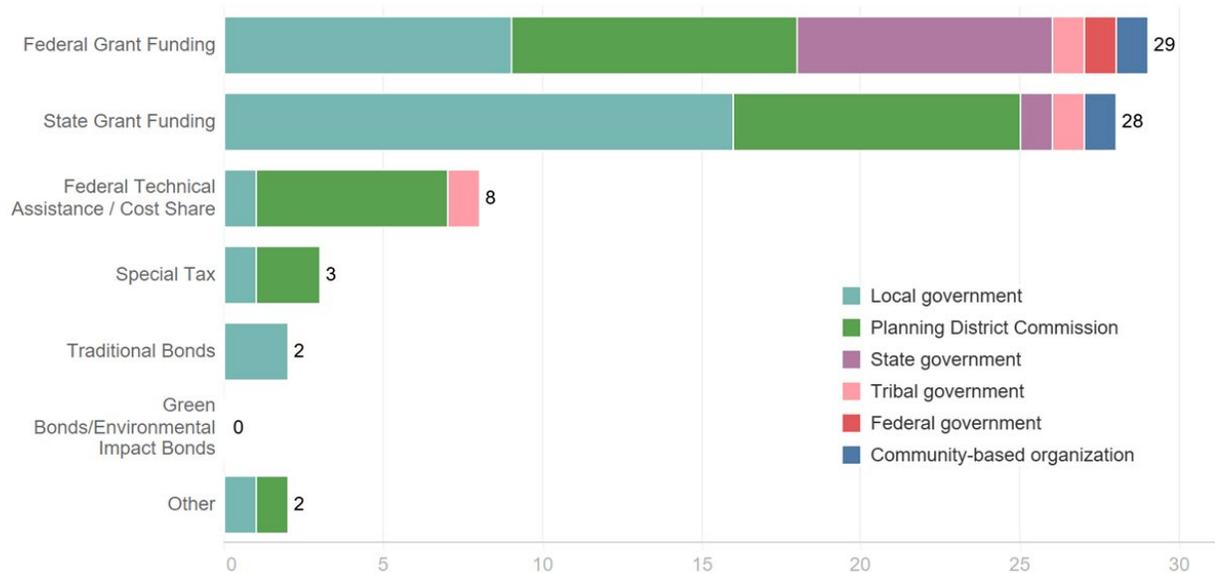


Figure 11. Responses to “What types of financing have you *sought* to fund your flood resilience activities (projects, staffing, initiatives, planning, etc.)?” broken down by organization type.



Funding Barriers

Additionally, respondents were asked about the barriers they face when seeking or accessing funding for resilience activities and responses to that are presented in Table 5.

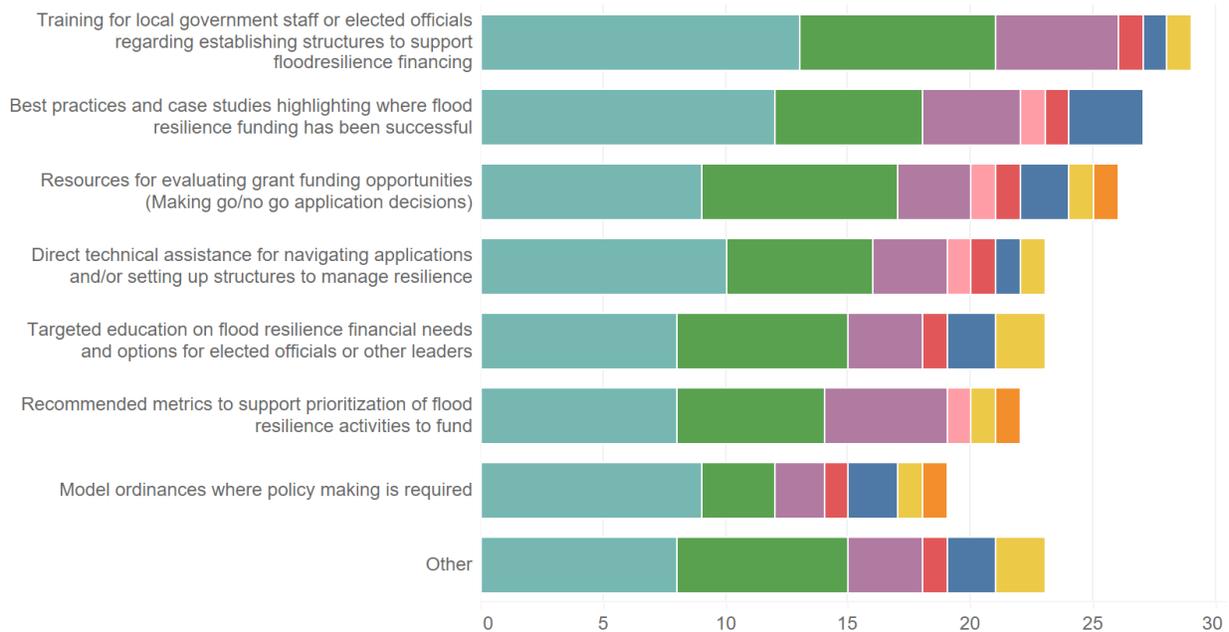
Table 3. Responses to “Are there any specific barriers that have prevented you from seeking or accessing funding for flood resilience activities?” broken down by organization type. Responses that were left blank or indicated a simple “no” or “not applicable” are excluded.

ORG TYPE	RESPONSE
Local government	Many funding sources require the project to be identified in a 'plan' so having all of our projects in this plan is expected to be beneficial as we look for future funding.
	The Grant application process has become extremely cumbersome and time consuming. We weigh the amount against how much we will need to spend just to put an application together which is getting ridiculous. Also many state grants are becoming difficult to get funds back in a timely manner, which means we are fronting the money for months or a year.
	CFPF maximum grant cap, state revolving loan max. cap, limited time between NOFO and grant deadline (need time for City Manager signature).
	Lack of staff to apply for grants is the biggest challenge for us. Also, better communication of grants that are available.
	I think our limited population size might have prevented us from obtaining BRIC funding. Not sure about that.
	insufficient staff
	lack of staff - Because the VA grants only cover the cost of hiring new employees and do not cover salaries of existing employees, we do not have the staff to execute any grants. In small areas like Northampton County, the cost of a CFM has historically been too much. Until the Phase one of the CFPF grant we did not have a CFM. Now the county is deciding whether or not they will continue to have a CFM because the funding for that position is gone.
	Local match required by state and federal grants.
	Just that I haven't decided yet how to approach grant application for project related to LiDAR or aerial drone imagery
	County Admin does not want to do anything that curbs the development community.
	Capacity
	General capacity to write the grants and apply for them.
	Staff time
	staffing/matching funding
H & H analysis before addressing flooding issues, but no funds for the analysis	
Planning District Commission	Agency and government capacity. Willingness of local decision-makers.
	Because flood resilience doesn't include more ancillary impacts (such as rates of septic failure and soil mapping), our region appears to not be impacted which can dissuade elected officials from acting and hurt our grant funding chances. There are also just more opportunities out there than we can possibly keep up with and we rarely have extra capacity to keep making "shovel ready" projects.
	Local contributions
	Limitations on how often one can apply (DSFPP five-year gap). Inability to use CFPF funds for existing staff or to include indirect costs. Staff capacity for developing proposals.

ORG TYPE	RESPONSE
	<p>staff to manage new initiatives.</p> <p>Limitations are related to grant funder priorities.</p> <p>I'm honestly unsure since I haven't done anything with funding so far.</p>
	<p>Northern Virginia is often limited by environmental justice and/or marginalized community requirements within grant programming, especially in recent BIL/IRA programs. While this is important to ensure that marginalized communities have equitable access to funding, the screening tools can be limiting for communities in the region that are marginalized, but do not fit into the screening tools' programming.</p> <p>we need more data on Pluvial flooding before we can design resilience projects and apply for funding.</p>
State government	<p>Challenged to find grants that apply to specific needs</p> <p>Not sure/NA - Our program (CZM) is a pass through organization, so we're driven by the needs of our network.</p> <p>VDEM traditionally seeks funding on behalf of localities that are interested in applying. Barriers we have seen at the local level are cost share, and staffing.</p> <p>Seeking funding grants for resilience requires quite a bit of work. There is a limitation on staffing resources.</p>
Tribal government	<p>Limited staff capacity in terms of numbers and subject-matter expertise hinder out ability to apply for funding for a multitude of reasons, some of which amount to simply not having enough time to read a NOFO. At the state-level, some funding opportunities are not available to Tribes, and for those that are, the competition is so strong that it often is not worth the time and resources to apply for a grant that likely will not be awarded anyway. In general, I think Tribe-to-state funding and coordination processes are still very new, especially for the Federally recognized Tribes, so it's just uncharted territory for both sides.</p>
Other	<p>A lack of grant writing personnel</p> <p>Local match requirements</p> <p>NOAA/EPA Smart Growth for Coastal and Waterfront Communities (2009) not adopted locally by Locality, initially, no locality Certified Floodplain Manager, and deficient implementation of Planning for any but headwater area the Locality. Without administrative Implementation, Planning and incorporated language in State Statute required local "Plans" i.e. Official Map (Zoning) and Comprehensive Plan, the Administrative representation of Hazards is poor and poorly positions Community Action Plans in the most at risk communities. I</p> <p>Petersburg City Council</p> <p>We do not specifically engage in flood resilience advocacy, education or other activities. However, we are working with RAFT to see how we can empower business owners who seek to facilitate flood resilience for area residents.</p>

When presented with a multiple-choice question about actions the Commonwealth could take to address funding barriers, the majority of respondents said that training for local staff, best practices and case studies, and resources for evaluating grant opportunities would be helpful. The distribution of responses are show in Figure 12.

Figure 12. Responses to “What could the Commonwealth do to help address barriers that prevent you from seeking or accessing funding for flood resilience activities?” broken down by organization type.



General Support Needs

Finally, respondents were asked for additional input on ways the Commonwealth could support their flood resilience needs. Responses are presented in Table 6.

Table 4. Responses to “Are there any other ways in which the Commonwealth could support your organization's flood resilience needs?” broken down by organization type. Responses that were left blank or indicated a simple “no” or “not applicable” are excluded.

ORG TYPE	RESPONSE
Local government	It is very valuable to understand what is happening across the state, especially in communities like ours - small and highly urban with older infrastructure being decimated with these very severe storm events that don't trigger a declaration of a NR disaster but they really negatively impact our community (cars are totaled, basements and first floors under water, driving is unsafe, pets get swept away, people are displaced, etc.). While we understand what is happening here in NoVA through those relationships and through our PDC, it would be great to learn from other cities facing these challenges! We are looking to learn as much as we can from our partners across the state so helping to facilitate that would be very valuable! Thank you!
	Climate Change issues are more than just sea level rise. Extreme rainfall and urban flooding in old drainage systems is a major issue. Unfortunately, in an effort to provide funding to coastal issues, other issues now have less priority.
	Create a model pathway for communities to obtain a state-match on large federal Coastal Storm Risk Management projects. Similar to NY/NYC.
	This falls into another Departments purview.
	Education classes and updates telling local government how to be involved.

ORG TYPE	RESPONSE
	<p>You all are doing a wonderful job and I am grateful for your support thus far.</p> <p>Yes. Our county does not have the funds to hire a full time grant expert. At this time the CFM is also the grant writer. This person is not experienced in writing grants. The county would benefit from funding staff so that the employee can get acquainted with the job and the funding available.</p> <p>Continue to fund traditional grey infrastructure flood resilience projects (flood walls, elevation projects, etc.) and Dam Safety improvements/upgrades. While green infrastructure is important, it is not always feasible and limited in certain major flooding applications.</p>
<p>Planning District Commission</p>	<p>More capacity-building initiatives and opportunities. Supporting and scaling proven efforts, skill sharing. Developing and supporting more regional-wide approaches. Reaching out to local decision-makers and non-traditional partners. Monetizing future flood impacts.</p> <p>To be determined</p> <p>change the stormwater regulations to reflect projected rainfall, provide more grants even to low scoring CFPF applications, setup policy that guarantees state share of non-federal match for large construction projects, invest more state funding to address roadway flooding</p> <p>The waterfront along the Chesapeake Bay and tributaries are ~98% privately owned. Clearly declare that funding flooding problems on private property with public resources helps to protect the tax base of rural localities. There is a public nexus between spending public dollars on private property and protection of public health, safety, and welfare. If flooding decreases real-estate values, local govt can't fund essential services. If they raise taxes to cover the lost revenue, flooding becomes a regressive tax on the poor who don't live on the waterfront.</p> <p>Training on grant writing itself would be really helpful for myself. Also, more information on where to start for dam assessments either locally or on a regional scale. We have many that are not assessed and we know that there is funding. I'm just not sure where/who to start with.</p> <p>Continued communication and education opportunities with the PDCs to pass information on to the localities. At least in Northern Virginia, this has worked well through our workgroups and engagement with localities, but additional engagement opportunities for localities to participate and understand how they can utilize the plan and its tools would also be helpful. An example would be through the precipitation data/analyses through Phase II - having a workshop or training event for interested localities to understand how they could utilize/apply the data to their own planning and projects.</p> <p>Capacity is a major issue. Every community has flood resilience projects they want to see implemented, but who is going to design it, plan it, seek funding for it, manage the grant, and execute the project? Staff and nonprofits are mostly at capacity. Can the Commonwealth do anything to make flood resilience projects more accessible to neighborhoods?</p>
<p>State government</p>	<p>More certainties around how state funds will be tied to planning efforts. This may just take time to get to, but it's definitely an issue we hear about in our network a lot.</p> <p>Could DCR provide a presentation to VDEM staff on the CRMP products?</p>
<p>Tribal government</p>	<p>I really think more meaningful engagement and more frequent dialogue needs to happen between the state government and Tribal governments. I believe the state is making great strides to that end, but there is a lot of work left to do. For example, this survey did not have an option at the beginning for Tribal entity. It is vital to Tribal communities that they be actively consulted and that the results of those conversations are shown in spaces like this where DCR is seeking feedback from the different groups affected by sea-level rise and other coastal resilience issues. I do believe as conversations progress that incorporation of the Tribes will be easier and more evident so long as the conversation is continuous.</p>
<p>Other</p>	<p>Provide examples of completed projects with the details of the project. Include lessons learned and pitfalls encountered, if any.</p> <p>Public Outreach in mobilized communities. "See one do one" approach. Communication and technical guidance for positioning where Communities have provided feedback and engagement to DCR is key.</p>

ORG TYPE	RESPONSE
	Hire someone who knows about these things to work for the city of Petersburg. We simply need more people in order to do the job.

Survey Respondents by Organization

Table 7. Number of survey respondents from each organization, classified by organization type.

ORG TYPE	ORGANIZATION	NUMBER OF RESPONDENTS
Local government	City of Alexandria	1
	City of Newport News	1
	City of Norfolk	1
	City of Portsmouth	1
	City of Richmond	1
	City of Suffolk	1
	King George County	1
	King William County	1
	Lancaster County	1
	Middlesex Department of Social Services	1
	Northampton County	2
	Prince William County	2
	Southampton County	1
	Spotsylvania County	1
	Stafford County	2
	Town of Ashland	1
	Town of Dumfries	1
Town of West Point	1	
Planning District Commission	Accomack-Northampton PDC	1
	Crater PDC	1
	George Washington RC	2
	Hampton Roads PDC	2
	MPPDC	1
	Northern Neck PDC	1
	Northern Virginia RC	1
	PlanRVA	1
State government	Department of Environmental Quality	1
	Department of Housing and Community Development	1

ORG TYPE	ORGANIZATION	NUMBER OF RESPONDENTS
	Virginia Coastal Zone Management Program; DEQ	1
	Virginia Department of Conservation & Recreation - Division of Natural Heritage	2
	Virginia Department of Conservation and Recreation	1
	Virginia Department of Emergency Management	1
	Virginia Department of Transportation	1
	Virginia Port Authority	1
Tribal government	Nansemond Indian Nation	1
Federal government	Marine Corps Base Quantico	1
Community-based organization	Bay Aging	1
	Crittenden, Eclipse and Hobson (CE&H) Heritage Civic League	1
	Northumberland Public Library	1
University or Institute of Higher Education	Virginia State University	2
Consulting firm conducting flood resilience work	Salter's Creek Consulting	1
Private industry (not consulting)	Communities In Schools of Petersburg, Inc.	1

Community Outreach

The efforts to conduct local government and public input outreach through the PDCs was a sound strategy. We would offer the following alterations to that strategy moving forward.

- Further integrate the data collection efforts with the outreach meetings.
- Allow for more time and provide greater opportunity to complete the data collection/outreach campaign to local governments and stakeholders.
- Be specific in your requests for data and the stated goals of meetings.
- Conducting public outreach through the PDCs was not as effective because PDC are not typically public-facing organizations and have to walk a line with their member local governments. This outreach is better conducted by the Outreach Subcommittee through a more targeted approach. Find out where the gaps in input are and target those communities through community-based organizations. Utilize more press, media, and social media to get the word out about the campaign.

It is the role of the Outreach Subcommittee to help identify which stakeholders to engage, this begins by having a diverse and inclusive membership.

The NNPDC role and capacity, and PDCs in general, are as facilitators, conveners, local government liaisons, and planners.

The Outreach Subcommittee should be the origin for all insight into how to conduct outreach going forward. It felt at times like there were two outreach efforts.

Federal Installation Partnerships

Following study of relationships, resources, and coastal resilience challenges in the shared locality, state, and federal Installation space, the Subcommittee identified the following:

1. Mutual benefit exists for localities and federal installations when they combine efforts for resilience solutions.
2. The best solutions will be locally driven, state supported, and federally shared. In this context, federal installations are regarded as local partners.
3. Wide awareness and relationship gaps exist between localities, state, and federal entities.
4. The state's primary CRMP value proposition is Locality support through information sharing, technical assistance, federal advocacy, and funding.
5. Tools and resources exist that can convey awareness, align relationships, and galvanize a locally driven, state supported, and federally shared approach to current and future resilience threats.
6. Localities and the state can help champion federal authorities to better serve local and federal installation resilience needs by advocating for policy changes at the Congressional level.

The Subcommittee recommends the following:

1. Develop formalized and sustained local and regional resilience networks that include local, state, and federal representatives-- and provide:
 - a. Sustained resilience planning teams with an Executive Steering Committee and widely representative stakeholder pool.
 - b. Well defined geographical areas of study.
 - c. Sustained vulnerability and risk assessments that result in prioritized projects and implementation plans.
 - d. Funding solutions.
2. Implement existing Compatible Use Study (formerly Joint Land Use Study) vulnerability/risk assessments, and associated plans and proposed projects.
 - a. Include capacity building recommendations in the Coastal Resilience Master Plan (CRMP) [enclosure 1]

Virginia Coastal Resilience Master Plan | Technical Advisory Committee
Subcommittee Recommendations

- b. Encourage sustained Compatible Use or Military Installation Resilience (locality/federal installation shared) studies to be updated at least every 5 years.
 - c. Apply similar studies for non-Department of Defense federal installations.
 3. Initiate and sustain a state campaign to support localities.
 - a. Educate and advocate for federal and state supporting resources (funding, capacity, etc.)
 - b. Build and incorporate a resources “roadmap”, tied to state agency representatives, that closes the existing awareness and resource gaps among locality, state, and federal stakeholders. Include a “checklist” of suggested prerequisites localities should complete to increase eligibility and competitiveness for federal funding. Examples include an approved All hazards Mitigation Plan, Compatible Use or Military Installation Resilience study, and U.S. Army Corps of Engineers Vulnerability Assessment.
 - c. Designate state funding sources to help localities meet match requirements for federal grants.
 - d. Ensure every Defense Community in the CRMP study area is aware of the Association of Defense Communities— [Advancing Resilience for Defense Communities - A Planning Framework](#). Although intended for Defense Communities, this publication is relevant for all communities contending with coastal resilience challenges and should be included in their resource libraries.
 - e. Partner with bordering states for locally driven, state supported, and federally shared resilience solutions.
 4. Support federal authorities that will provide local and state advantages. Specifically, support legislative changes at the Congressional level to enable the U.S. Army Corps of Engineers (USACE) to conduct feasibility studies that include Coastal Storm Risk Management (CSRМ) project features on federal properties, and to construct such features, utilizing shared federal civil works appropriations and/or non-federal sponsor funds.
 5. Seek to adapt existing wide-area infrastructure models (e.g. VDOT Smart Scale) to Coastal Resilience solutions.

Virginia Coastal Resilience Master Plan | Technical Advisory Committee
Subcommittee Recommendations

Enclosure 1: Existing Compatible Use Study (Joint Land Use Study) Plan Capacity Building Actions

A. 2017 Virginia Regional JLUS

1. Adopt Statewide Military Compatible Land Use Planning Guidelines for Local Governments to Integrate into Regional and Local Planning and Zoning Documents (2017 Virginia Regional JLUS)
2. Establish Permanent Funding Sources for Military Compatibility Planning and Assistance for Local Governments and Other Agencies, (2017 Virginia Regional JLUS)
3. Virginia Leadership should consider working with the military and Maryland Leadership to formally establish a Virginia -Maryland Military Compatibility Working Group. If established, this group should consider being responsible for communication, coordination, and monitoring the implementation of actions needed to address compatibility issues that occur within the identified public resources used for military training. The primary focus for this group is broad military capabilities that can affect state installations that have operational or influence areas that span both states (such as Military Training Routes). (2017 Virginia Regional JLUS)
4. Virginia Leadership should consider working with the military and North Carolina Leadership to formally establish a Virginia -North Carolina Military Compatibility Working Group. It would helpful if this group would consider being responsible for communication, coordination, and monitoring the implementation of actions needed to address compatibility issues that occur within the identified public resources used for military training. The primary focus for this group is broad military capabilities that can affect state installations that have operational or influence areas that span both states (such as Military Training Routes). (2017 Virginia Regional JLUS)

B. 2019 Norfolk and Virginia Beach Joint Land Use Study

1. To address both installation and DoD personnel readiness, implement the applicable, climate resilience “Recommended JLUS Actions” found in Table 3-2 of the report. The top four, highest scoring actions are capacity building projects including (in order):

Action 1: Hampton Boulevard Comprehensive Flood Mitigation and Stormwater Management Strategy

Action 2: Shore Drive Comprehensive Flood Mitigation and Stormwater Management Strategy

Action 3: JEB Little Creek Gate 1 - Amphibious Drive - Shore Drive Flooding Study

Virginia Coastal Resilience Master Plan | Technical Advisory Committee
Subcommittee Recommendations

Action 4: East Amphibious Drive, Chubb Lake, and Lake Bradford Flood Mitigation and Stormwater Management Strategy

2. Implement “Coordination and Outreach Strategies” identified in Table 4-1 of the report, including:
 - Develop a stormwater systems maintenance MOU for each installation and respective locality to define ongoing roles and responsibilities for routine maintenance of ditches, culverts, and other drainage components that span locality/ Navy jurisdiction.
 - Establish coordination protocols between city floodplain managers and Navy support personnel to share information about flood risk, flood insurance, existing city programs, and floodplain development regulations.
 - Update the Military Commuter Survey (HRTPO) to address issues related to flooding and sea level rise and how these issues affect overall access to work and other services.
3. While the document’s “Advocacy Strategies” regarding federal funding (DCIP) are discussed, new resilience funding resources available from the Commonwealth should also be recognized (REGGI auction funds, etc) and used to advance the recommendations of the JLUS)

C. 2018 Hampton-Langley JLUS Resilience Addendum

1. To address both installation and DoD personnel readiness, implement the climate resilience recommendations of the Addendum, including:
 - Determine which roadways are designated as high priorities for JBLE-Langley
 - Establish a plan to maintain access of key corridors
 - Establish support for strategic relocation to higher ground
 - Develop a stormwater management plan
 - Manage stormwater off the base in City owned land
 - Coordinate ecological improvements with base development

Virginia Coastal Resilience Master Plan | Technical Advisory Committee
Subcommittee Recommendations

D. Fort Pickett JLUS

1. COM-3A: Establish a JLUS Implementation Coordination Committee Formalize through a resolution that the Fort Pickett JLUS Policy and Technical Committees will transition to a JLUS Coordination Committee and be responsible for monitoring the achievement of the recommended JLUS strategies and act as a forum for continued communication and sharing of information and current events associated with military compatibility. Jurisdictions should appoint a military liaison to be the point of contact to be on the committee who would be present at jurisdiction meetings. The resolution should outline such assigned responsibilities. (Partners: Nottoway County Brunswick County Dinwiddie County Town of Blackstone)
2. COM-8A: Review Existing Military Operations that Use Facilities / Resources Located Off Fort Pickett Fort Pickett should identify and review all existing military training operations that make use of facilities, equipment or other resources that belong to other organizations. A determination should be made if the training activities could be conducted in the future and may still require use of facilities, equipment or resources that do not belong to Fort Pickett. Those operations without current agreements (MOU / MOA) should be flagged. See COM-8B
3. DSS-2A: Ensure Affected Jurisdictions and Public are Notified of Wildland Fires Fort Pickett and the VAARNG should work closely with Dinwiddie County and other jurisdictions in the Study Area to ensure timely notifications when wildland fires are burning on the installation, particularly when there are off installation impacts such as smoke. To the extent possible, Fort Pickett should also provide notification to the public via their website and social media sites

DSS-2B: Jurisdictions Need to Keep Community Informed of Wildland Fires
Government departments in the local communities need to ensure they provide adequate information to members of the public when the potential exists for wildland fire impacts. Actual wildfire information should be provided including whether natural occurring fire or prescribed burn event. Jurisdictions should establish telephone (consider use of CodeRED type notification) and text message notifications to residents along with websites and social media sites to provide updates and status of wildland fire impacts such as smoke moving into communities.
4. LU-1B: Add a Fort Pickett element to Comprehensive Plans JLUS Partner jurisdictions should incorporate a Fort Pickett element into their comprehensive plans that looks into compatibility and encroachment issues with the installation.

Virginia Coastal Resilience Master Plan | Technical Advisory Committee
Subcommittee Recommendations

5. RE-1: Stormwater on the airfield runways and taxiways. During heavy rain events there are instances where stormwater drainage backs up onto the Allen C. Perkinson Airport Blackstone AAF runway and taxiways. This can affect aircraft movements on taxiways and aircraft sorties (landing, take-offs, touch and goes, etc.) impacting training operations. (This was identified as an internal issue only – are there any off-base contributing factors? Town of Blackstone?) The recent construction of the State Department FASTC complex has added additional impervious surfaces to the south and east of the airfield. While new construction projects on Fort Pickett are required to comply with federal and state requirements for management of stormwater runoff, the increased impervious surface in combination with the existing impervious surface has the potential to increase stormwater runoff on and around the airfield. Over long periods of time stormwater runoff has the potential to affect the integrity of the runways, taxiways and ramps on the airfield due to soil erosion. (http://www.pickettlanduse.com/images/docs/fpmtc_final_backgroundreport.pdf Page 5-119)
6. RE-1B: Conduct Periodic Stormwater Infrastructure Maintenance Fort Pickett should ensure maintenance teams conduct periodic stormwater infrastructure preventative maintenance that is regularly scheduled. Maintenance should include clearing obstructions in manmade (e.g. culverts) and natural (e.g. waterways) infrastructure and correcting any identified deficiencies. Maintenance teams should also ensure locations where flooding occurs are visited in advance of major weather events when flooding is predicted and take any necessary actions. (This was identified as an internal issue only – are there any off-base contributing factors? Town of Blackstone?)
7. RC-2: Concern with impacts to roadways in the Town of Blackstone. The Town of Blackstone is the closest jurisdiction to Fort Pickett. Some of the economic development commercial activities located within the boundary of the installation but located on non-military land (e.g. Pickett Park) cause impacts to roadways within the town. In addition, trucks supporting FASTC during construction have also caused some deterioration to town roads. These roadway impacts can cause issues for the town where limited road maintenance funds are available. Flooding not considered?

E. 2014 Marine Corps Base Quantico JLUS

1. Update the JLUS with an addendum that provides a new and more detailed assessment of climate vulnerabilities with the goal of identifying recommendations to eliminate or mitigate those threats. See:
 - a. Recommendations CO.6 - Develop a regional dialogue towards mitigation of environmental impacts and resource conservation (on and off base) .

Virginia Coastal Resilience Master Plan | Technical Advisory Committee
Subcommittee Recommendations

- b. Recommendation EC.1 - Pursue conservation partnering opportunities through the Readiness and Environmental Protection Integration (REPI) under DoD and through state, local and private conservation efforts (in collaboration with conservation partners) to pursue suitable properties for conservation in JLUS Military Influence Area Zones 1.2, 1.3, 2.1, 2.4 , 3.1 and 5.1. (EC.2)
- c. Recommendation EC.3 - Using the QRESC/QRPT structure, cooperatively work together on stormwater management and other water quality initiatives for shared watersheds (see Recommendation CO.6)
- d. Recommendation EC.4 - Through coordination between Prince William County and MCB Quantico, pursue restoration projects along Little Creek to address erosion and flooding issues in this water body and the adjacent properties from Route 1 to the Potomac River. SEE ONGOING, MID-TERM, and LONG-TERM strategies.

F. Naval Weapon Station Yorktown – 2013 Encroachment Action Plan

- 1. Use the CUP process to update the NWSY 2013 Encroachment Action Plan and provide greater specificity than the 2017 Virginia Regional JLUS to address current resilience issues/needs. See the Regional JLUS, Goal 8, page 43 where it states:
 - There are several public waterways including the Appomattox, Potomac, James, and York Rivers that provide invaluable training assets and realistic training environments for the military; however, these public waterways are also utilized by the general public and commercial business. These waterways should be protected to support ongoing multiple uses.

G. Fort AP Hill

- 1. Use the CUP process to provide greater specificity than the 2017 Virginia Regional JLUS to address current resilience issues/needs.

H. 2021 Portsmouth & Chesapeake JLUS

- 1. To address both installation and DoD personnel readiness, including flooding impacts to infrastructure, access, rail and port operations at the Craney Island Fuel Depot, implement the applicable, climate resilience “JLUS Actions” found in Table 5.2 of the report. The top four, highest scoring actions (Tier 1) are capacity building projects including (in order):

Virginia Coastal Resilience Master Plan | Technical Advisory Committee Subcommittee Recommendations

Action 1: Effingham Street Comprehensive Flood Mitigation and Stormwater Management Strategy.

Action 2: George Washington Highway Comprehensive Flood Mitigation and Stormwater Management Strategy.

Action 3: Victory Boulevard Comprehensive Flood Mitigation and Stormwater Management Strategy

Action 4: Portsmouth Boulevard Comprehensive Flood Mitigation and Stormwater Management Strategy.

Other notable JLUS actions include:

Action 16: Work with VDOT to pursue a flood risk/ vulnerability assessment of highway interchanges (access ramps) that considers future SLR and future rainfall along with traffic generation patterns.

Action 17: Complete a future flood risk/vulnerability assessment of all public facilities and their associated access corridors.

I. Fort Lee

1. Use the CUP process to provide greater specificity than the 2017 Virginia Regional JLUS to address current resilience issues/needs.

J. NSF Dahlgren

1. Use the CUP process to provide greater specificity than the 2017 Virginia Regional JLUS to address current resilience issues/needs.

K. Installations in VA not covered by an existing JLUS (are these considered to be in the “coastal” area identified in the VCRMPF?):

- Army Reserve National Guard sites in VA
- Arlington & US Soldiers and Airmen's Home National Cemeteries
- Defense Supply Center Richmond
- NSA Washington – NSF Arlington
- WHS Pentagon
- AFETA Camp Peary

Aligning Economic Development

The Master Plan should include a definition of economic development, and contain a clear message of the economic impacts of increased flooding in the coastal zone. The subcommittee recommends that the Master Plan provide acknowledgement and support for industries that develop a resilience and adaptation economy in Virginia. The scale of impacts in coastal Virginia and across the state provide an opportunity for the Commonwealth to be a global market leader in solutions that enhance resilience.

We recommend that the General Assembly provide incentives for businesses to develop innovative resilience-enhancing products, technologies, designs, and services, to partner with universities to capitalize on their expertise, and to foster workforce development in building and implementing resilience solutions. These incentives could include such nonfinancial measures as expedited permitting so that innovative solutions like green infrastructure can be rapidly implemented. However, funded incentives — including tax breaks for related R&D and capital investment as well as grants and low-interest financing — will also be important.

As part of this effort, we recommend that the Commonwealth continue to support economic development investments in Virginia’s resilience and adaptation economy, such as the recent GO Virginia grant to foster coastal resilience and an adaptation economy (Virginia Sea Grant). We further recommend that the state explore making financial and nonfinancial incentives available to smaller local jurisdictions to increase their ability to support business activities that further resilience, and enable them to address impacts such as overburdened septic systems and ditch networks that affect water quality.

Stakeholders need a better understanding of scientific topics to better understand how coastal resiliency efforts would impact economic development, and there is a need to educate elected officials who are in the business of economic development. The subcommittee compiled a list of economic outreach contacts and sought their feedback to a series of questions in order to guide the focus and priorities of the subcommittee. By working with our contacts in coastal Virginia, the subcommittee will be able to provide the CRMP with valuable feedback that aids stakeholders.

For future iterations of the CRMP, the subcommittee is committed to the following:

- Continuing to survey the capacity of its members and how they can contribute to the CRMP planning process.
- Representing all of coastal Virginia and restructuring the subcommittee if needed.
- Developing a list of Virginia Economic Development Partnership approved recommendations that will benefit the CRMP.