

VFPMP 4.5 Implementation Roadmap Workshop

Workshop Summary Report

Identify Flood Resilience Strategies Workshop Agenda

- Welcome & Introductions
- Presentation
 - Meeting Objectives & Plan Update
 - Introduction of VFPMP Final Strategies & Draft Actions
- Break
- Small Group Activity Pt. 1
 - Small groups discuss 4 strategies and their associated actions
- Working Lunch
 - Presentation by the American Flood Coalition
- Small Group Activity Pt. 2
 - Small groups discuss 4 strategies and their associated actions
- Large Group Discussion
- Wrap Up

Presentation

The Arcadis team delivered a presentation to Virginia Flood Protection Master Plan (VFPMP) Core Stakeholders and Supporting Stakeholders during an in-person workshop held on June 25th, 2025) to 1) update stakeholders on the development of the VFPMP and 2) provide necessary context to facilitate an activity on the draft VFPMP actions to advance flood resilience.

The VFPMP development update included an overview of plan progress to date, including the meeting objectives, a recap of previous meetings and their outcomes, and the 16 final strategies that will guide the plan's actions.

In addition, the Arcadis team explained how the draft actions were developed from the gap analysis, strategy identification, and stakeholder feedback, and explained the small group activity for facilitation.

Following the presentation, stakeholders took a quick break and were instructed to pick up a packet with an outline of the final strategies and their draft actions to use as a guide for the small group activity.

FINAL STRATEGIES & DRAFT ACTIONS

Theme	Strategy	Action
Meaningful Coordination	A.1 Coordinate among applicable personnel across state agencies to increase their awareness and responsiveness to flood resilience.	A.1.a: Strengthen interagency collaboration on flood resilience programs, policies, tools, and projects.
		A.1.b: Deliver consistent messaging that reinforces state policy on flood resilience
	A.2 Leverage coordination networks and relationships with nongovernmental entities and the private sector to advance flood resilience.	A.2.a: Evaluate and adapt flood resilience coordination networks to drive towards flood resilience outcomes
		A.2.b: Expand partnerships among state agencies and nongovernmental organizations including private industry to progress flood resilience efforts.
	A.3 Coordinate across all levels of government to align and advance flood resilience.	A.3.a: Coordinate on expanded state agency outreach, engagement, and assistance to regional governments
		A.3.b: Enhance coordination with federal stakeholders through Virginia Silver Jackets and other formal or informal means.
Enhanced Capacity	B.1 Expand the flood resilience knowledge of state agencies.	B.1.a: Ensure all agency staff receive relevant flood resilience training.
		B.1.b: Enhance accessibility of Virginia-specific flood resilience tools.
		B.1.c: Maximize the impact of conferences, trainings, and knowledge exchange opportunities to expand flood resilience expertise.
	B.2 Routinely assess and adapt state agency roles, responsibilities, and authorities in flood resilience.	B.2.a: Regularly maintain a comprehensive list of agency roles, responsibilities, and authorities for flood resilience.
		B.2.b: Monitor, evaluate, and report on missing capacities needed for increasing flood resilience across Virginia.
Resilience Funding	C.1 Optimize existing flood resilience funding resources to accomplish flood resilience goals.	C.1.a: Build a comprehensive understanding of current funding resources for flood resilience in Virginia.
		C.1.b: Maximize the effectiveness of existing funding resources to achieve flood resilience goals.
	C.2 Explore new financial mechanisms to advance implementation.	C.2.a: Explore potential funding mechanisms for flood resilience efforts.
		C.2.b: Support the expansion of public-private partnerships to progress flood resilience.
	C.3 Identify the financial needs to manage flood risk and drive action at the state level.	C.3.a: Conduct a flood resilience needs assessment across state agency and local government.
		C.3.b: Leverage the needs assessment to prioritize and drive action.
Reliable Data Systems	D.1 Establish a statewide comprehensive flood data management program.	D.1.a: Define the roles and responsible entities who oversee the flood data management program.
		D.1.b: Incorporate a comprehensive suite of flood datasets into a centralized hub to streamline data development, access, sharing, and coordination.
	D.2 Establish data-informed decision-making framework for prioritizing flood resilience actions.	D.2.a: Establish an interagency framework for flood data usage.
		D.2.b: Develop methodologies for agency-specific flood data-informed decision making.

Theme	Strategy	Action
Proactive Adaptation	E.1 Invest in effective and innovative flood resilience solutions.	E.1.a: Facilitate innovative flood resilience policy and projects through pilot efforts.
		E.1.b: Demonstrate effective risk mitigation strategies for state-owned infrastructure.
	E.2 Support the deployment and maintenance of Nature-Based Solutions, where appropriate.	E.2.a: Establish a policy for evaluating Nature-Based Solutions as a flood resilience strategy.
		E.2.b: Expand funding programs for Nature-Based Solutions.
		E.2.c: Launch a Nature-Based Solutions awareness and education campaign.
		E.2.d: Research the performance and co-benefits of existing and emerging nature based solutions for water quality and water quantity.
	E.3 Encourage the incorporation of flood resilience best practices during revisions of plans, policies, regulations, codes, and standards.	E.3.a: Update building codes and infrastructure standards to be more flood resilient.
		E.3.b: Incorporate flood resilience into agency-specific plans and policies.
Supported Local Governments	F.1 Provide technical assistance for local, regional, and tribal governments on flood resilience.	F.1.a: Coordinate among agencies to provide flood resilience technical assistance.
		F.1.b.: Support local governments to modernize land use policies by incorporating flood resilience considerations.
		F.1.c: Create a centralized way to communicate technical assistance opportunities to local, regional, and Tribal governments.
		F.1.d: Support local government compliance with floodplain management requirements to mitigate risk and maintain eligibility in the NFIP program.
		F.1.e: Increase the adoption of CRS activities and No Adverse Impact approaches in local floodplain management.
	F.2 Explore state agency pathways for supporting locally driven adaptation solutions.	F.2.a: Explore a state supported approach to managed retreat.
		F.2.b: Support local governments to mitigate severe and repetitive loss properties
		F.2.c: Leverage state contracts and cooperative agreements to facilitate local efforts.
		F.2.d: Support flood recovery planning and provide recovery training to reduce flood disaster recovery durations.
	F.3 Expand engagement with local, regional, and tribal governments to increase understanding of flood resilience.	F.3.a: Launch a State-wide Flood Resilience Outreach & Engagement Initiative.
		F.3.b: Enhance understanding of flood resilience concepts among stakeholders and communities.

Small Group Exercise

Attendees were divided into six small groups based on similar affiliations, authorities, and interests to participate in discussions about strategies and their actions.

First, the groups were tasked with deciding which eight of the 16 strategies they wanted to focus on. Groups were instructed to choose strategies based on which ones they may be affected by or help influence the implementation of.

Once the group decided which eight strategies they wanted to discuss in more detail, the objective of each discussion was for the group to agree on the priority level and recommended implementation timeline of each action within each strategy. Groups were given posters to mark with each strategy and its actions, and spaces to fill out priority level (low, medium, or high) and recommended implementation timeline (immediate, short-term, long-term) for each action, and compare their assessments against the Arcadis team's initial assessments.

Each strategy was discussed by at least one group. Below is a breakdown of the six themes, along with their strategies and associated actions. The notes below each strategy portray the conversations had and the conclusions drawn about each strategy and their actions within each group's discussions.

THEME A: MEANINGFUL COORDINATION

Strategy A.1: Coordinate among applicable personnel across state agencies to increase their awareness and responsiveness to flood resilience.

The single group that discussed Strategy A.1 noted a consensus on the immediate and high-priority nature of both its actions, emphasizing the crucial role of consistent messaging.

A.1.a (personnel awareness), while foundational, is seen as supported by the development of coordinated messaging. The Office of Resilience, particularly the Chief Resilience Officer (CRO), should have a lead role in facilitating this interagency collaboration and message consolidation.

A.1.b (consistent messaging) was highlighted as a higher priority, with stakeholders emphasizing that a unified "Commonwealth Message" is vital before agencies can effectively coordinate or engage external partners. Inconsistent messages from different agencies can frustrate and disengage local stakeholders.

Strategy A.2: Leverage coordination networks and relationships with nongovernmental entities and the private sector to advance flood resilience.

Three groups chose to focus on strategy A.2 for further discussion. There was agreement that both actions within this strategy are High Priority and Ongoing, acknowledging that effective coordination is a continuous effort, not a one-time task. A key point of discussion involved the sequencing of the actions, with some believing A.2.b (expanding partnerships)

should precede A.2.a (evaluating networks), as new partnerships naturally inform the evaluation. However, the overarching goal of driving tangible regional and local flood resilience outcomes, beyond just meetings, was a shared sentiment across groups.

Strategy A.3: Coordinate across all levels of government to align and advance flood resilience.

Three stakeholder groups discussed strategy A.3, and there was strong consensus that this effort is a crucial and ongoing process, to be centrally managed by the Chief Resilience Officer. While initial talks varied on whether actions were "immediate" or "continuous," the final agreement leaned towards an "Ongoing" timeline for both regional/local and federal outreach.

For regional and local government outreach (a.3.a), there was unanimous agreement on its high priority. Stakeholders emphasized the need to "expand outreach" to local entities and provide concrete "assistance" to address their significant capacity constraints. Discussions highlighted the critical challenge of reconciling local development incentives with increasing flood risk, underscoring the need for improved information transfer and potential legislative guidance.

Regarding federal partner outreach (a.3.b), initial opinions on its priority ranged from "medium" to "low," largely due to concerns about federal reliability. However, subsequent discussions elevated it to a high priority, with a focus on enhancing coordination through existing mechanisms like the Virginia Silver Jackets and exploring new models, such as adapting principles from the Incident Command System for long-term planning and resource management.

All discussions included the pervasive issue of limited local capacity, the necessity for consistent messaging across all levels of government, and the difficulty in measuring the effectiveness of coordination efforts. The desire for a centralized, well-maintained dashboard of flood resilience resources also emerged as a common aspiration, highlighting a clear need for better information accessibility.

THEME B: ENHANCED CAPACITY

Strategy B.1 Expand the flood resilience knowledge of state agencies.

One group chose to discuss strategy B.1, highlighting the need for targeted and continuous efforts in training and tool development.

B.1.a: This action was deemed a High Priority with an Immediate and Continuous timeline, emphasizing targeted training relevant to specific agency roles.

B.1.b: Also a High Priority with an Immediate and Continuous timeline, this focuses on developing and sharing internal tools and expanding existing resources beyond specific regions.

B.1.c: This was assigned a Medium Priority with a Short Term/Immediate to Ongoing timeline, aiming to support training and collaboration through workshops and conferences.

Overall, the strategy emphasizes an immediate, high-priority push for targeted training and tool development, with ongoing professional development to continuously enhance state agency flood resilience knowledge.

Strategy B.2 Routinely assess and adapt state agency roles, responsibilities, and authorities in flood resilience.

Four groups discussed Strategy B.2 and developed strong consensus on the necessity of this assessment while also delving into the scope, methodology, and ongoing nature of the effort.

There was a general agreement to expand the scope of this strategy beyond state agencies to encompass "all levels of government concerning flood resilience," including state, regional, local governments, and tribal entities. It was clarified that for tribal entities, the state's role would be to coordinate with or request information from them, not to unilaterally adapt their policies.

B.2.a: This action was consistently deemed a High Priority with an Immediate timeline. Stakeholders noted that this effort is crucial for all other resilience initiatives and, in some aspects, is already underway by the Office of Resilience. The lack of a centralized, accessible directory of "who is doing what" and "who can do what" was identified as a significant impediment to effective collaboration, especially given staff turnover. The information is believed to be largely available but fragmented, making this a manageable initial lift. This comprehensive list is seen as foundational, feeding directly into subsequent adaptation efforts.

B.2.b: This action was generally considered a Medium Priority with a Short Term to Ongoing timeline, though some advocated for it to be a higher priority, particularly for the Office of Resilience. The action is seen as dependent on the completion of B.2.a. There was a strong emphasis on understanding not just what exists, but also what capabilities are lacking across state, regional, and local entities. The dynamic nature of capacity needs was recognized, with suggestions that this assessment could be done yearly or aligned with administrative changes, such as the bi-annual state reports.

Throughout the discussions, the importance of effective communication and collaboration was a recurring theme, with mentions of how current private meetings might hinder inter-departmental connections. The overarching sentiment was that a clear understanding of roles, responsibilities, and authorities across all levels of government is paramount for a cohesive and adaptive flood resilience strategy, with the Office of Resilience playing a key role in facilitating this comprehensive assessment and adaptation process.

THEME C: RESILIENCE FUNDING

Strategy C.1: Optimize existing flood resilience funding resources to accomplish flood resilience goals.

Three groups chose to discuss strategy C.1.

C.1.a: This action consistently emerged as a High Priority with an Immediate timeline. There was a strong consensus on the need for a comprehensive inventory or database of all relevant funding, extending beyond direct flood-specific funds to include broader "flood avoidance and resilience" resources from state, federal, and potentially private sources. This understanding is viewed as foundational for all subsequent efforts and crucial for informing local governments, many of whom are unaware of available mechanisms. The concept of an ongoing, consistently maintained database was strongly supported, with suggestions for a dedicated entity to manage it due to its broad perspective.

C.1.b: This action was also unanimously deemed a High Priority, with a timeline ranging from "Immediate" to "Ongoing." It builds directly on the comprehensive understanding gained from C.1.a. The potential for PDCs to assist localities in accessing funds was acknowledged, though their varying capacities were noted. The importance of aligning funding priorities with administration goals and integrating flood resilience benefits into broader economic and community development tools was also highlighted.

Overall, both actions are seen as intertwined and critical.

Strategy C.2 Explore new financial mechanisms to advance implementation.

Four groups chose to focus on Strategy C.2, which focused on identifying and leveraging new funding sources beyond traditional public grants, and some mention of public-private partnerships.

C.2.a: This was consistently a High Priority with an Immediate to Short Term timeline. The urgency stems from the need to find new, sustainable funding beyond traditional grants, potentially including innovative public finance tools, to ensure resilience efforts continue regardless of administrative changes.

C.2.b: Generally, a Medium Priority with timelines from "Immediate" to "Long Term," PPPs were seen as a valuable, albeit complex, opportunity. While not as immediately critical as securing public funding, they represent a significant long-term avenue for advancing flood resilience, potentially encompassing broader industry development.

Overall, the strategy aims to create a more robust and adaptable financial framework for flood resilience, with an immediate focus on exploring new public funding streams and a longer-term view on integrating public-private collaborations.

Strategy C.3: Identify the financial needs to manage flood risk and drive action at the state level.

Two of the groups focused on strategy C.3. There was a general consensus that the needs assessment (Action A) is a high-priority undertaking, essential for informing future funding mechanisms and strategies. While initially considered immediate, the group acknowledged

that significant preparatory work is required, including addressing data availability, ensuring comprehensiveness, and engaging diverse stakeholders, including tribal communities. The timeline for completing a robust statewide needs assessment is anticipated to be longer than an immediate timeframe, likely spanning 3-4 years, rather than the initial 1-2 years. The importance of leveraging existing information from other plans and providing technical assistance to localities, many of whom lack the capacity to conduct their own assessments, was emphasized. The groups recognized that securing resources, including funding and personnel, would be necessary to conduct this assessment effectively.

Regarding identifying and securing dedicated state-level funding (Action B), the groups both concluded that this action is of medium priority and is largely dependent on the completion and findings of the needs assessment (Action A). While the ultimate goal is to obtain more funding for flood protection, there was discussion about whether such funding should be constrained by specific plans. The group recognized that securing funding is a significant challenge and requires dedicated effort and resources. The adaptive nature of both the needs assessment and funding strategy was highlighted, acknowledging that financial needs will change as flood risks are mitigated or exacerbated over time.

In conclusion, both groups determined that the needs assessment (Action A) should be prioritized as high, with a short-term (3-4 year) timeline for completion, recognizing the extensive groundwork required. Securing dedicated funding (Action B) was deemed a medium priority, with its timeline directly dependent on the completion and insights gained from Action A. The overall sentiment was that both actions are crucial but need to be sequenced logically, with the needs assessment providing the necessary foundation for effective long-term financial planning for flood risk management in Virginia.

THEME D: RELIABLE DATA SYSTEMS

Strategy D.1: Establish a statewide comprehensive flood data management program.

Four stakeholder groups focused on strategy D.1 for detailed discussion.

D.1.a: This was consistently labeled High Priority with an Immediate timeline. Stakeholders emphasized the fundamental need for clear leadership and coordination to prevent duplication and create accountability for the entire data management program.

D.1.b: This action was generally considered High/Medium Priority with a Long Term timeline. The concept of a centralized data hub was widely supported for improving access, but concerns were raised about implementation complexity, data consistency, and ongoing maintenance.

Overall, establishing clear roles (D.1.a) is an immediate, critical first step, while developing the centralized data hub (D.1.b) is a recognized long-term, complex endeavor.

Strategy D.2: Establish data-informed decision-making framework for prioritizing flood resilience actions.

Two groups focused on Strategy D.2, emphasizing the need for decisions to be made using data.

D.2.a: Develop an interagency framework for prioritizing flood resilience actions, the priority level varied between High and Medium, with timelines ranging from Short Term to Long Term. While essential for achieving consistent data application (e.g., sea level rise projections) and risk across different agencies, some groups saw it as dependent on broader data management efforts (D.1). A significant suggestion for this action was the immediate need for an "agency-level needs assessment" to inform the framework, acknowledging varying agency starting points.

D.2.b: This action consistently received a High Priority with an Immediate start. Stakeholders viewed it as foundational, emphasizing that each agency must first define how it will utilize data for its unique functions, similar to ongoing efforts at VDOT. This internal development is seen as crucial for empowering agencies with tailored data-driven capabilities.

In essence, the strategy proposes a multi-tiered approach. There's clear consensus on the immediate need for individual agencies to build their internal data-informed decision-making capacity. This internal development is viewed as a necessary precursor or parallel effort to establishing a comprehensive interagency framework that will ultimately bring consistency and collaboration to flood resilience prioritization across the Commonwealth.

THEME E: PROACTIVE ADAPTATION

Strategy E.1: Invest in effective and innovative flood resilience solutions.

One stakeholder group discussed strategy E.1. The Initial conversation was centered around what constitutes "innovative", leading to a discussion around current best practices.

E.1.a was generally viewed as a Long Term priority, needing preliminary work in data and funding. However, some saw opportunity for earlier "low-hanging fruit" or demonstration projects to inform future approaches and policy, despite labor and contracting challenges.

E.1.b was also seen as a Long-Term priority. This was deemed vital for public funds but faces challenges from maintenance backlogs, often prioritizing immediate repairs over innovation. Existing efforts like dam safety programs were noted, but overall funding remains a major hurdle.

Strategy E.2: Support the deployment and maintenance of Nature-Based Solutions, where appropriate.

Five stakeholder groups discussed Strategy E.2. A central theme was the need for robust evidence and clear policy to effectively integrate Nature-Based Solutions (NBS) into flood resilience strategies, with varying degrees of enthusiasm for NBS as a standalone solution.

E.2.a: The priority for this action varied from "Medium" to "High," with timelines ranging from "Immediate" to "Long Term." Some argued that establishing policy or a framework could be

accomplished in a shorter timeframe, emphasizing the need for clear regulatory pathways and standard consideration of NBS as an option. Others felt the state was "past" simply evaluating policy, needing to incorporate NBS as a standard alternative in permitting, rather than an ad-hoc consideration. The concept of a "loose recommendation" or "framework" rather than a rigid policy was also suggested.

E.2.b: This action was generally considered High Priority, with timelines ranging from "Short Term" to "5+ years." There was strong agreement that funding is a key component and a primary barrier. While some noted that funding exists for NBS, the limiting factor is often the local capacity to plan and deliver projects. Suggestions included shifting resources to make existing funding more accessible programmatically and integrating NBS into budgeting processes. Some argued it's a high priority that goes hand-in-hand with policy changes.

E.2.c: This action's priority ranged from "Low" to "High," with timelines from "Long Term" to "Immediate." Some believed awareness campaigns were critical to NBS, especially as an alternative to traditional "grey" infrastructure, as many do not fully understand what NBS entails. Others suggested it might be a lower priority after policy and funding frameworks are established.

E.2.d: This action emerged as a High Priority with a range of timelines from "Immediate" to "3-4 years." Many believed this research is foundational and critical for supporting other actions (E.2.a, b, c). While some acknowledged existing research, there was a strong call to "evaluate" rather than just "research," focusing on the application of existing knowledge and filling specific gaps. The need to connect NBS benefits to flood resilience, water quality, and quantity, and to translate academic findings for state use, was emphasized.

Overall, a central tension existed between the perceived need for more research and the belief that enough data already exists to move forward with policy and implementation. While the unknown of NBS support was mentioned, several groups highlighted existing state programs and ongoing academic efforts. The strategy's overarching "where appropriate" qualifier was consistently acknowledged, reflecting the understanding that NBS are not a universal solution but a valuable component of a broader flood resilience toolkit.

Strategy E.3: Encourage the incorporation of flood resilience best practices.

Four stakeholder groups discussed strategy E.3 in detail. A significant point of discussion centered on the strategy's core language. Many felt "best practices" was too subjective and suggested removing it, or at least clarifying who determines and defines them.

E.3.a: The goal is to move beyond ad-hoc application to standardized inclusion of resilience measures, potentially incorporating future flood conditions, while acknowledging existing efforts by some agencies and the need to address gaps in others.

E.3.b: This action focuses on integrating resilience principles into diverse agency-specific planning, moving towards a more systematic approach informed by risk tolerance and data.

Throughout the discussions, the importance of clear definitions for "best practices," effective enforcement, consistent messaging, and inter-agency coordination was repeatedly highlighted.

SUPPORTED LOCAL GOVERNMENTS

Strategy F.1: Provide technical assistance for local, regional, and tribal governments on flood resilience.

Three groups chose to focus on Strategy F.1. There was broad consensus that F.1.a: "Coordinate among agencies to provide flood resilience technical assistance," should be a High Priority and Immediate action. This action was seen as foundational, with one group noting that getting it done quickly would accelerate other strategies. The inclusion of tribal entities and ensuring information and resource sharing, with their representatives in decision-making, was strongly emphasized. This coordination among state agencies was deemed critical, particularly to be established before potential administrative changes.

F.1.b: While initially considered "low priority" by one group, another later suggested it could be "high priority," describing it as a broad catch-all for local planning efforts beyond just land use, encompassing CIP, housing, and water supply. The importance of incorporating future flood conditions and the Community Rating System (CRS) was highlighted, with the understanding that updated land use policies could improve CRS scores. The timeline for this action was generally considered "Long Term," though some felt it should be addressed sooner due to ongoing planning efforts by PDCs and other entities. The idea of the state supporting local planning efforts through professionals or existing funding mechanisms, like the Office of Intermodal Planning, was also raised.

F.1.c: High Priority with an "Immediate to Short Term" timeline. This action was seen as crucial for addressing the current lack of awareness regarding available assistance, especially for tribal governments. One group suggested it could be incorporated into or made a sub-action of F.1.a, implying it's a pre-work step for effective overall technical assistance delivery.

F.1.d: High Priority and Immediate/Ongoing action. This was considered more important than some other actions due to its direct impact on localities' ability to avoid penalties and maintain crucial NFIP status. The discussion extended to include coordination among state agencies that issue permits impacting the NFIP, emphasizing the need for information transfer and collaboration with localities, not just notification.

Finally, F.1.e: Low Priority and Long Term action by one group, though another suggested it builds the case for F.1.b (planning) and could be implemented in the current cycle without full CRS enrollment. The idea of making CRS participation a metric for prioritization of state funding was a key suggestion, acknowledging the significant lift for communities to maintain good scores and the benefits of minimizing risk in high-risk areas. The broader concept of "No Adverse Impact" was clarified as policies minimizing risk, factoring in increased flood risk changes.

Overall, while all actions under F.1 are seen as essential for advancing flood resilience, the groups agreed around F.1.a and F.1.d as the most immediate and high-priority, given their role in inter-agency coordination and compliance for localities. The remaining actions, F.1.b, F.1.c, and F.1.e, while important, often had longer-term timelines or were seen as supporting elements that would be enhanced by the successful implementation of the immediate priorities.

Strategy F.2: Explore state agency pathways for supporting locally driven adaptation solutions.

Four stakeholder groups chose to discuss strategy F.2.

Action F.2.a: This action generated significant discussion and was largely deemed a Low Priority with a long-term timeline. While some acknowledged that certain areas may eventually become unlivable, there was strong agreement that the state should not direct managed retreat, but rather "explore" approaches for application at the local or regional level, specifically "When requested by a local entity." There was a shared understanding that this is a hard conversation requiring significant preparatory work and that it should be a state-led exploration to provide toolkits, not a local burden.

F.2.b: This action consistently garnered a Medium Priority and an Ongoing timeline. It was widely seen as a front-line effort, though some noted that existing programs like RBF and CFPF already address this. The discussion broadened to include not just severe and repetitive loss but also "flood avoidance and resilience." The importance of directly engaging with communities, considering equity in managed retreat scenarios, and recognizing that awareness is also a challenge were highlighted.

F.2.c: This action was generally seen as a High Priority by some and Medium/Low Priority by others, but consistently landed as Immediate to Short Term or Ongoing. There was strong agreement that leveraging state contracts could expedite projects for localities by bypassing lengthy local procurement processes, which often result in delays and sub-par work. The concept of a "consultant pool" or "CEAs" (Consultant Engineer Agreements) was highly favored, allowing for rapid project execution. Concerns were raised about procurement policies and the need for state agencies to be flexible and avoid taking on direct management of all local projects. The idea of the state providing funding and guidance while allowing localities to manage their own bid processes was also suggested.

F.2.d: Note: This action's wording was slightly different across groups, sometimes focusing on "training" or "capacity." This was largely viewed as a High Priority and Immediate to Short Term action, deemed critical for statewide application, not just coastal areas. It was seen as attainable and a missed opportunity if pushed to a later cycle. The scope included training, planning grants, and modeling. Some noted that this is likely already happening to some extent but needs to be made more efficient and coordinated within state agencies. The overarching sentiment was that providing expertise and resources is crucial for smaller communities lacking internal capacity to develop and implement resilience plans.

While managed retreat (F.2.a) is considered a long-term, low-priority exploration, direct mitigation support (F.2.b) and leveraging state contracts (F.2.c) are viewed as more immediate and medium to high priority, offering tangible solutions to local funding and administrative hurdles. Technical assistance for planning and implementation (F.2.d) is seen as an immediate, high-priority necessity for all levels of government, including tribal entities, to build essential local capacity and ensure effective flood resilience.

Strategy F.3: Expand engagement with local, regional, and tribal governments to increase understanding of flood resilience.

Four groups discussed strategy F.3. There was discussion to refine the strategy's language to explicitly include "risks and concepts" and consolidate or merge the existing actions for launching and enhancing understanding into a single initiative. This effort was consistently deemed a High Priority, with an Immediate launch leading into an Ongoing process, ideally led by the Chief Resilience Officer.

Launch a State-wide Flood Resilience Outreach & Engagement Initiative: This action is deemed a high priority with an immediate start.

Inventory Existing Outreach & Engagement Initiatives: Before launching new efforts, a crucial first step identified is to systematically inventory current outreach initiatives at state, local, and regional levels. This will help identify existing resources, effective partners, and areas where efforts need to be concentrated or coordinated.

Enhance Understanding of Flood Resilience Concepts: This high-priority action is viewed as an ongoing process that builds upon the statewide initiative.

Working Lunch (AFC Presentation)

During lunch, the American Flood Coalition (AFC) provided a brief presentation on their organization and their experiences with similar resilience planning efforts across different states and provided insights into the different types of statewide resilience and flood protection plans.

Presenters explained how the VFPMP can fit into these plans and how it can position the Commonwealth as a leader in flood resilience across the country.

Large Group Discussion

Following the small group discussions, the Arcadis team gathered the larger group together to discuss one final question: *How can state agencies maintain focus on long term (5+ year) actions?*

Stakeholders briefly discussed the desire for increased communication and opportunities to collaborate, citing the VFPMP in-person workshops as a positive experience to bring people together to have necessary conversations. Stakeholders also mentioned the need for

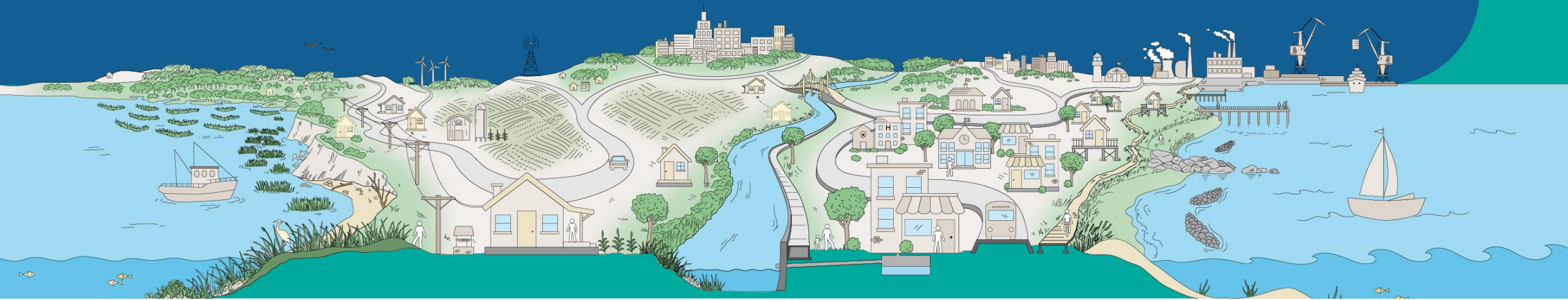
accurate data and clearly defined metrics associated with them, noting that these long-term actions will need to be tangibly tracked to continue progress.

Following this large group discussion, the Arcadis team provided a link to a follow-up survey and attendees were dismissed.

VIRGINIA FLOOD PROTECTION MASTER PLAN

Develop Implementation Roadmap

4.5 In-Person Meeting: June 25th, 2025



Develop the Implementation Roadmap

In-Person Meeting Objectives

1. Understand the purpose, scope, and process of the Virginia Flood Protection Master Plan.
2. Understand how the Implementation Roadmap builds off the plan's Vision, Goals, Objectives, Prioritized Gaps, and Strategies.
3. Review and provide input on the Plan's Actions.

Meeting Agenda

- Welcome & Team Introductions
- Development of Implementation Roadmap Update
- *Break*
- Small Group Discussions – Implementation Roadmap & Draft Actions
- *Working Lunch Break – Flood Resilience Plans in Peer States*
- Small Group Discussions Continued
- Next Steps & Wrap Up

DCR Office of Resilience Planning

Planning for a flood resilient future.



Matt Dalon

Program Manager



Carolyn Heaps-Pecaro

Resilience Planner



Ellie Plisko

VCU Wilder Fellow



Gabrielle Rosario

VASG Coastal and
Marine Policy Fellow

DCR Office of Resilience Planning

Planning for a flood-resilient future.

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

Why we do it: We envision a Virginia where state-led solutions effectively confront present and future flood risks. Through aligned collective action, we will increase resilience and minimize the impacts of flooding statewide.



DCR Office of Resilience Planning

Planning for a flood-resilient future.



**Develop and
Implement
State-led Flood
Resilience Plans**



Coordinate Action



**Supply Data,
Information and
Resources**

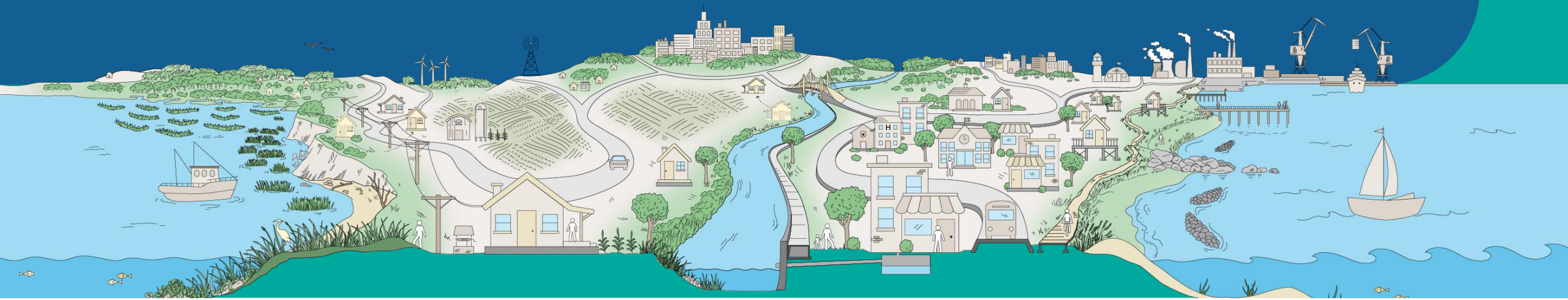


**Conduct Outreach
and Engagement**

Planning Team

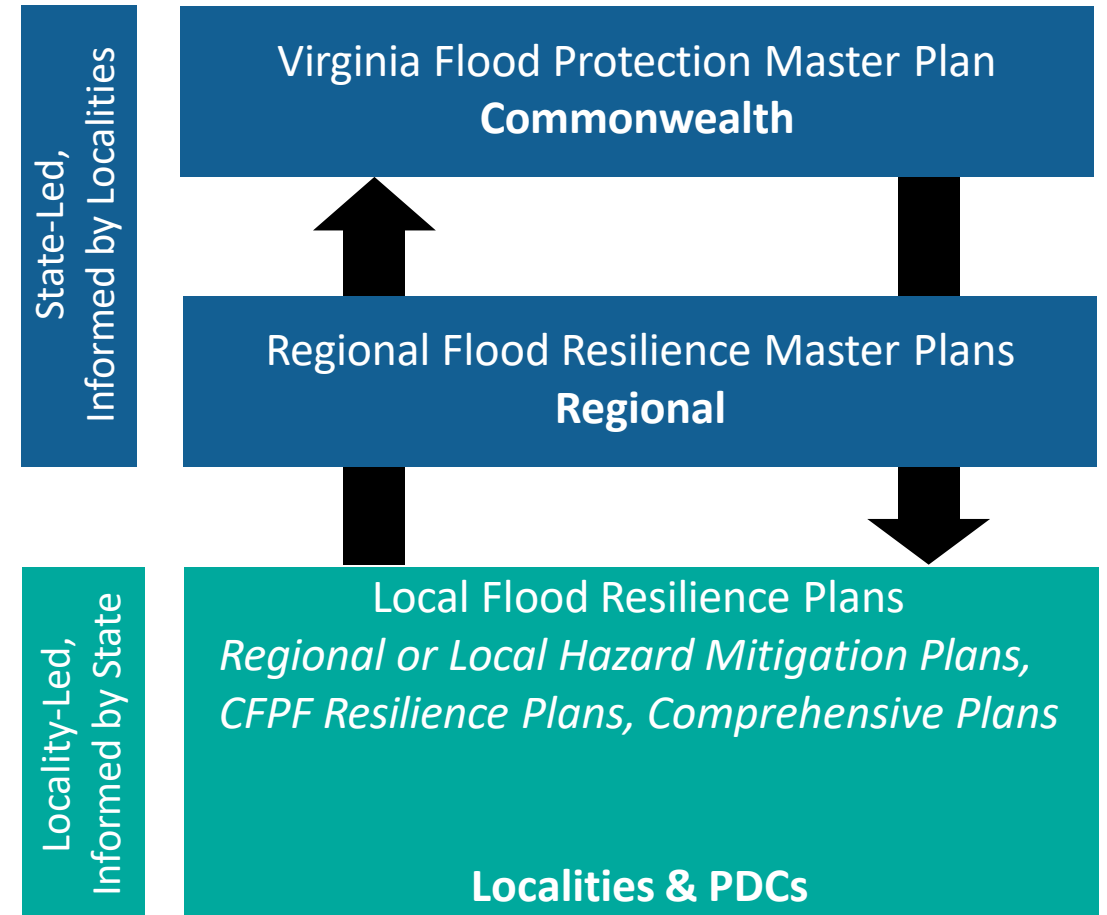


The Virginia Flood Protection Master Plan (VFPMP) will be **an actionable plan** for the Commonwealth to use in crafting policies and programs to mitigate the impacts of flooding on people, the economy, and the environment.

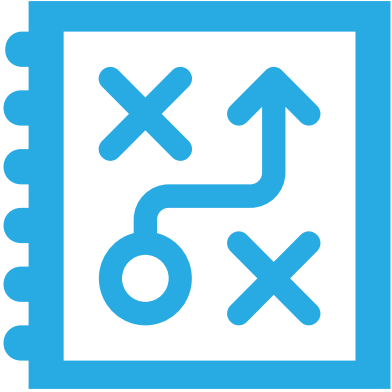


Understanding VFPM's Role in Virginia's Flood Resilience Planning Efforts

- The Virginia Flood Protection Master Plan is intended to inform smaller scale plans and vice-versa
- The primary end users of the Virginia Flood Protection Master Plan will be Virginia state agencies
- Focus on state agencies will allow for flood resilience planning to spread throughout state initiatives and flow down into regional & local programs



VFPMP Final Products*



The Plan



Report in
Brief

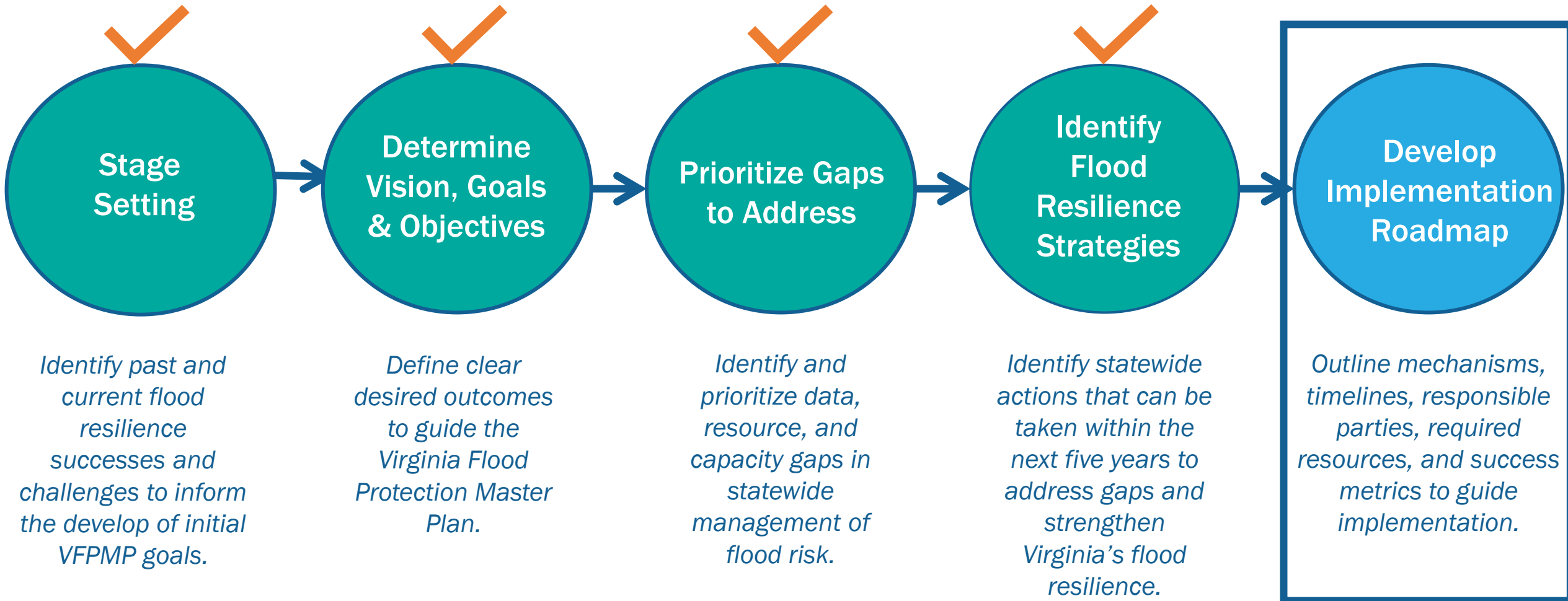


Data Viewer

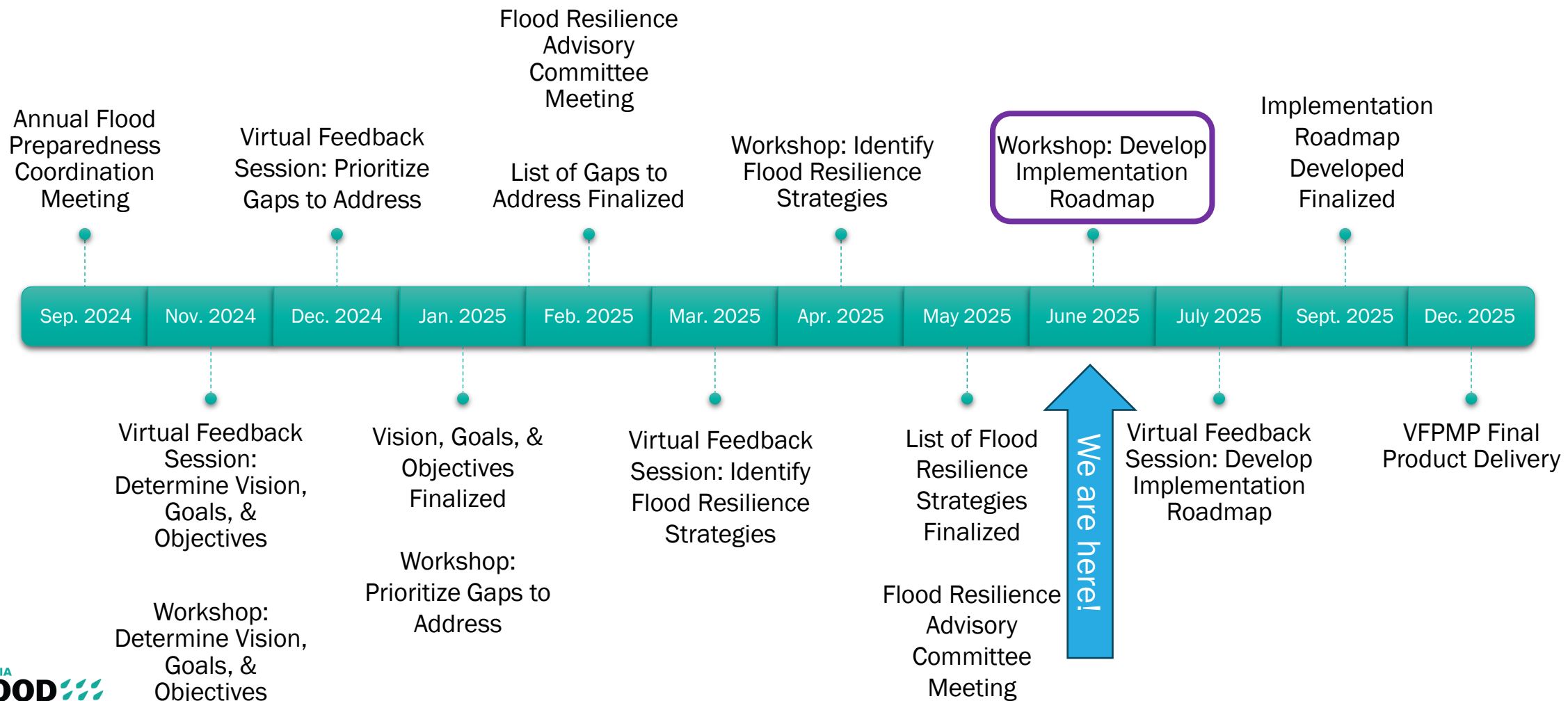


Status
Tracker

KEY POINTS IN COLLABORATIVELY DEVELOPING THE VFPMP



Overview of VFPM Development Schedule & Engagement Points



HMP & VFPMP Key Benefits

VDEM

HMP Enhanced Status

- Recognizes the state for its ongoing and coordinated work to reduce losses from natural hazards, protect life and property, and create more resilient communities.
- Mitigation strategies and actions:
 - Cover eligibility for federal funding of mitigation projects.
 - Developed through collaboration and coordinated outreach efforts
- Next Steps:
 - Relevant agencies will receive the mitigation actions for feedback this summer.
 - An updated draft will then be shared with the Hazard Mitigation Advisory Committee and Working Group before finalizing and submitting the plan to FEMA.

DCR

2025 Flood Protection Master Plan

- Supports alignment across agencies, serving as a guiding light for the Commonwealth, presenting the long-term vision, while growing collective momentum and focused on action and implementation
- Establishes goals and vision for 2025-2045 planning horizon
- Establishes policy and program strategies for 2025-2030 planning horizon
- Provides for the first time, a baseline for flood impacts statewide using common methods, assumptions, and inputs and allowing for comparison across geographies

APPROACH TO STRATEGY & ACTION DEVELOPMENT

Where we are going

Timeframe: 2025-2045

Vision



Long-term aspirations and desired outcomes for flood risk reduction across Virginia

Goals



Succinct statements of what needs to be accomplished to move towards the Vision

Objectives

Provide the basis for evaluating alternatives and measuring progress towards goals

How we get there

Timeframe: 2025-2030

Strategies



Actionable approaches to address gaps in the current state of practice and advance the plan's goals

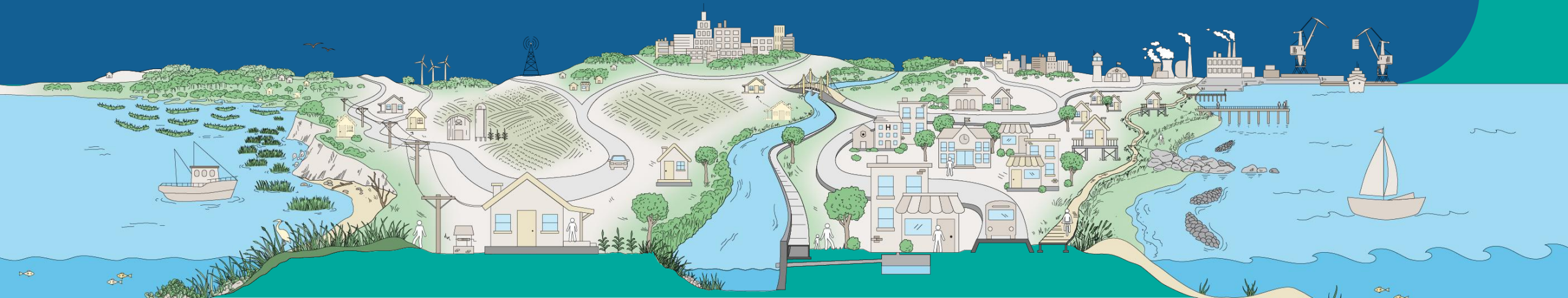
Implementation Roadmap

Outline the specific steps and mechanisms to implement the strategies and actions identified



STRATEGIES MUST HELP ACHIEVE PLAN VISION

A thriving Commonwealth proactively addressing flood risks to further strengthen the resilience of communities, the economy, and the environment now and into the future.



STRATEGIES & ACTIONS MUST ALIGN WITH PLAN GOALS AND OBJECTIVES



A. Mitigate current and future flood risks statewide.

- A1. Reduce negative effects on human health from flooding.
- A2. Reduce negative impacts to vulnerable populations from flooding.
- A3. Reduce flood damage to buildings and infrastructure.
- A4. Reduce economic disruptions and losses from flooding.
- A5. Reduce negative effects to natural and cultural resources from flooding.



B. Advance lasting and unified strategies to address flood risk.

- B1. Increase understanding of current and potential future flood risks.
- B2. Strengthen the ability to prepare for and manage flood risks.
- B3. Increase the adaptability and effectiveness of flood resilience strategies to potential future conditions and regional interests.
- B4. Increase the return on public investments in flood resilience.
- B5. Increase the accessibility of flood resilience resources, opportunities, and information for all Virginians.



C. Capture additional benefits through flood resilience.

- C1. Improve health and quality of life through flood resilience.
- C2. Boost the economy through flood resilience.
- C3. Enhance the natural environment through flood resilience.

STRATEGIES & ACTIONS MUST HELP ADDRESS PRIORITY GAPS

Prioritized Gaps

P1. Coordination among state agencies to streamline flood resilience strategies and reduce redundancies.

S1. Staff capacity and data management resources for coordination between federal, state, and local agencies during events to ensure targeted event response.

P2. Funding resources for long term resilience planning that supports a wide breadth of needs at both the state and local government levels.

S2. Staff capacity and funding resources for additional grant application and management support to local governments.

P3. Access to up-to-date data resources that support long-term flood resilience planning and resource allocation decisions.

S3. Funding resources for asset maintenance.

P4. Community knowledge and capacity to take proactive steps to reduce vulnerability to flooding.

S4. Reliance on non-permanent federal funding posing challenges in sustaining flood resilience programs.

P5. Staff capacity hindering collaboration, technical assistance provision, and funding outreach efforts.

S5. Staff capacity and resources to coordinate technical assistance for funding and program initiatives to address long-term flood resilience goals.

P6. Robust decision-making frameworks and capacities to facilitate long-term planning efforts and resource allocation decisions.

S6. Staff capacity for integration of flood resilience tools.

P7. Staff capacity and resources for interdepartmental data aggregation and coordination for comprehensive flood risk assessments, including those for state-owned assets.

S7. Staff capacity to address and assist with federal and state regulations.

FINAL STRATEGIES v. DRAFT ACTIONS

Strategies

Higher-level policy/program Strategies that build flood resilience and meet plan Objectives.

Timeframe: next **five years**, with longer-term relevance as the plan is updated over the next 20 years.

Room for **flexibility in how implemented**, to accommodate changing administrations and allow for alignment with agency-specific plans.

Characteristics:

- Broad and overarching.
- Focused on "what".
- Aimed at aligning resources and initiatives toward goals and objectives.
- Sets the foundation for decision-making and prioritization.

Actions

Illustrative examples of the kinds of **more detailed recommended actions** that can support the implementation of Strategies in the near term.

This content will be **revised and refined with stakeholder input** as part of what will be included in the Implementation Roadmap.

Timeframe: next **two years**, with ability to be annually updated to advance the plan over the next five years.

Characteristics:

- Specific and focused on execution.
- Can be targeted at and customized by agencies.
- Focused on "how" to achieve the strategy.
- Often short- to medium-term in nature and measurable.
- Can be one of many actions supporting the broader strategy.

STRATEGIES ARE ORGANIZED BY STAKEHOLDER-IDENTIFIED THEMES



Meaningful Coordination

We are actively increasing awareness and understanding of flood resilience efforts across state agencies and programs and leveraging existing networks to efficiently improve flood resilience outcomes.



Enhanced Capacity

We are actively integrating comprehensive staff training and development opportunities with strategic workforce planning to effectively manage and expand flood resilience efforts.



Resilience Funding

We are actively enhancing flood resilience through strategic financial management of existing and potential funding.



Reliable Data Systems

We are actively acquiring, managing, and sharing flood resilience-related data across agencies to inform decision-making and guide policy and program administration.



Proactive Adaptation

We are actively implementing innovative flood resilience solutions to enhance financial outcomes.



Supported Local Governments

We are actively enhancing partnerships with local, regional, and tribal governments to support place-based actions that advance the Virginia Flood Protection Master Plan goals and objectives.



Meaningful Coordination

FINAL Strategies:

- Coordinate among applicable personnel across state agencies to increase their awareness and responsiveness to flood resilience.
- Leverage coordination networks and relationships with nongovernmental entities and the private sector to advance flood resilience.
- Coordinate across all levels of government to align and advance flood resilience.



Enhanced Capacity

FINAL Strategies:

- Expand the flood resilience knowledge of state agencies.
- Routinely assess and adapt state agency roles, responsibilities, and authorities in flood resilience.



Resilience Funding

FINAL Strategies:

- Optimize existing flood resilience funding resources to accomplish flood resilience goals.
- Explore new financial mechanisms to advance implementation.
- Identify the financial needs to manage flood risk and drive action at the state level.



Reliable Data Systems

FINAL Strategies:

- Establish a state-wide comprehensive flood data management program.
- Establish data-informed decision-making frameworks for prioritizing flood resilience actions.



Proactive Adaptation

FINAL Strategies:

- Invest in effective and innovative flood resilience solutions.
- Support the deployment and maintenance of Nature-Based Solutions, where appropriate.
- Encourage the incorporation of flood resilience best practices during revisions of plans, policies, regulations, codes, and standards.

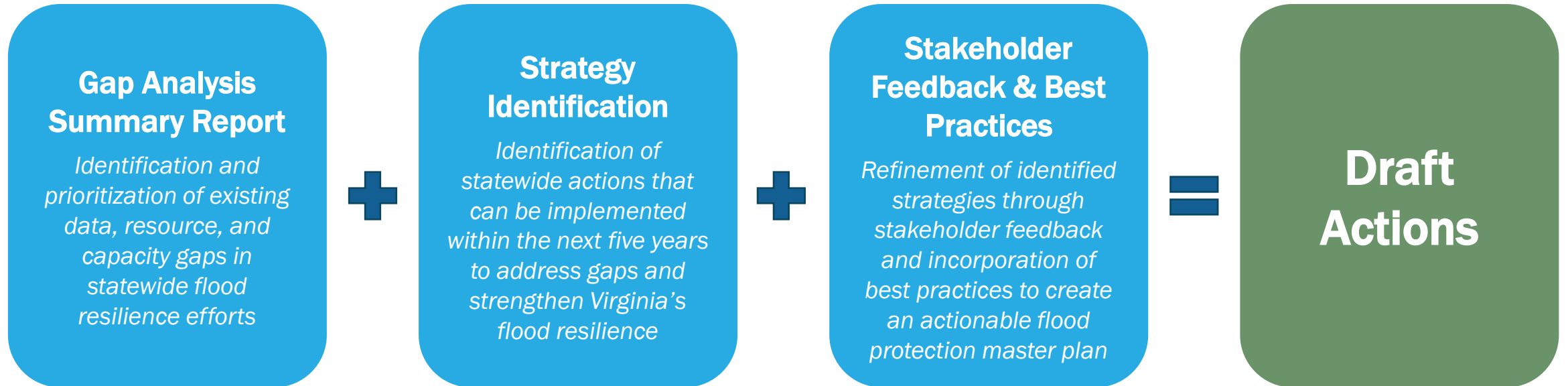


Supported Local Governments

FINAL Strategies:

- Provide technical assistance for local, regional and Tribal governments on flood resilience.
- Explore state agency pathways for supporting locally driven adaptation solutions.
- Expand engagement with local, regional, and Tribal governments to increase understanding of flood resilience.

Draft Actions



Draft Actions Handout Preview

Theme	Strategy	Action
Meaningful Coordination	A.1 Coordinate among applicable personnel across state agencies to increase their awareness and responsiveness to flood resilience.	A.1.a: Strengthen interagency collaboration on flood resilience programs, policies, tools, and projects.
		A.1.b: Deliver consistent messaging that reinforces state policy on flood resilience
	A.2 Leverage coordination networks and relationships with nongovernmental entities and the private sector to advance flood resilience.	A.2.a: Evaluate and adapt flood resilience coordination networks to drive towards flood resilience outcomes
		A.2.b: Expand partnerships among state agencies and nongovernmental organizations including private industry to progress flood resilience efforts.
	A.3 Coordinate across all levels of government to align and advance flood resilience.	A.3.a: Coordinate on expanded state agency outreach, engagement, and assistance to regional governments
		A.3.b: Enhance coordination with federal stakeholders through Virginia Silver Jackets and other formal or informal means.
Enhanced Capacity	B.1 Expand the flood resilience knowledge of state agencies.	B.1.a: Ensure all agency staff receive relevant flood resilience training.
		B.1.b: Enhance accessibility of to Virginia-specific flood resilience tools.
		B.1.c: Maximize the impact of conferences, trainings, and knowledge exchange opportunities to expand flood resilience expertise.
	B.2 Routinely assess and adapt state agency roles, responsibilities, and authorities in flood resilience.	B.2.a: Regularly maintain a comprehensive list of agency roles, responsibilities, and authorities for flood resilience.
		B.2.b: Monitor, evaluate, and report on missing capacities needed for increasing flood resilience across Virginia.
Resilience Funding	C.1 Optimize existing flood resilience funding resources to accomplish flood resilience goals.	C.1.a: Build a comprehensive understanding of current funding resources for flood resilience in Virginia.
		C.1.b: Maximize the effectiveness of existing funding resources to achieve flood resilience goals.

Break

1. Pick-up stakeholder packet
2. Sit at your group table based on assignment in stakeholder packet

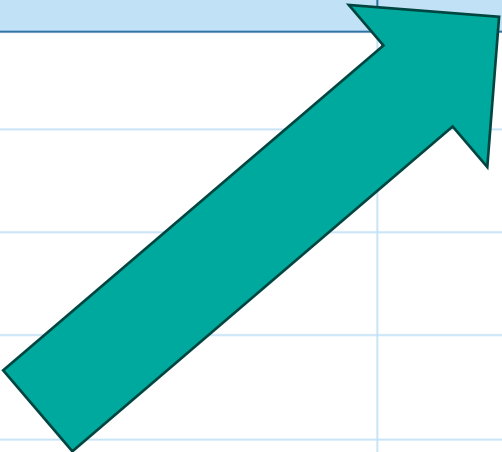
Draft Actions Handout Preview

Theme	Strategy	Action
Meaningful Coordination	A.1 Coordinate among applicable personnel across state agencies to increase their awareness and responsiveness to flood resilience.	A.1.a: Strengthen interagency collaboration on flood resilience programs, policies, tools, and projects. A.1.b: Deliver consistent messaging that reinforces state policy on flood resilience.
	A.2 Leverage relationships with the private sector	C.2 Explore new financial mechanisms to advance implementation. C.2.a: Explore potential funding mechanisms for flood resilience efforts. C.2.b: Support the expansion of public-private partnerships to progress flood resilience.
	A.3 Coordinate with local governments to align and advance flood resilience efforts	C.3 Identify the financial needs to manage flood risk and drive action at the state level.
	B.1 Expand technical assistance to local, regional, and tribal agencies.	D.1 Establish a statewide comprehensive flood data management program. D.2 Establish data-informed decision-making framework for prioritizing flood resilience actions
Enhanced Capacity	B.2 Routinely assess and improve agency responsibilities	E.1 Invest in effective and innovative flood resilience solutions. E.2 Support the deployment and maintenance of Nature-Based Solutions, where appropriate.
Resilience Funding	C.1 Optimize resources to support flood resilience efforts	

Theme	Strategy	Action
Supported Local Governments	E.3 Encourage the incorporation of flood resilience best practices during revisions of plans, policies, regulations, codes, and standards.	E.3.a: Update building codes and infrastructure standards to be more flood resilient. E.3.b: Incorporate flood resilience into agency-specific plans and policies.
	F.1 Provide technical assistance for local, regional, and tribal governments on flood resilience.	F.1.a: Coordinate among agencies to provide flood resilience technical assistance. F.1.b: Support local governments to modernize land use policies by incorporating flood resilience considerations. F.1.c: Create a centralized way to communicate technical assistance opportunities to local, regional, and Tribal governments. F.1.d: Support local government compliance with floodplain management requirements to mitigate risk and maintain eligibility in the NFIP program. F.1.e: Increase the adoption of CRS activities and No Adverse Impact approaches in local floodplain management.
	F.2 Explore state agency pathways for supporting locally driven adaptation solutions.	F.2.a: Explore a state supported approach to managed retreat. F.2.b: Support local governments to mitigate severe and repetitive loss properties F.2.c: Leverage state contracts and cooperative agreements to facilitate local efforts. F.2.d: Support flood recovery planning and provide recovery training to reduce flood disaster recovery durations.
	F.3 Expand engagement with local, regional, and tribal governments to increase understanding of flood resilience.	F.3.a: Launch a State-wide Flood Resilience Outreach & Engagement Initiative. F.3.b: Enhance understanding of flood resilience concepts among stakeholders and communities.

Strategy:	Timeline			
Action	Priority	Immediate (1-2 Years)	Short Term (3-4 Years)	Long Term (5+ Years)

Strategy:		Timeline		
Action	Priority	Immediate (1-2 Years)	Short Term (3-4 Years)	Long Term (5+ Years)



Strategy:		Timeline		
Action	Priority	Immediate (1-2 Years)	Short Term (3-4 Years)	Long Term (5+ Years)



Strategy:	Timeline			
Action	Priority	Immediate (1-2 Years)	Short Term (3-4 Years)	Long Term (5+ Years)

Questions to Guide Discussion for Each Action

- Considerations for ranking priority level (short, medium, or long term)?
 - What level of effort or resources will be required to complete this action?
 - What is the estimated timeframe to complete this action?
 - What would it look like for this action to be successful?
 - Are there any actions that must be completed before this action can proceed?

Working Lunch



AMERICAN FLOOD COALITION

Best practices in state flood planning: lessons learned from across the country

Virginia Flood Protection Master Plan June Workshop

June 25, 2025





The American Flood Coalition advances solutions to flooding through a coalition of diverse allies

Our Mission

Drive transformational adaptation to protect communities across the country
from higher seas, stronger storms, and more frequent flooding.



**Federal
Champions**



**Cities, Towns,
and Counties**



**Elected
Officials**



**Businesses
and Associations**



**Military
Groups**



**Civic and
Academic Groups**

Over 480 Members in 22 states and 51 Federal Champions





Working with state leaders around the country, AFC has developed the State Flood Resilience Framework

Leadership & Accountability

Who is in charge?

Data Management & Risk Assessment

What's at risk?

Strategic Planning

What should we prioritize?

Funding & Financing

How do we pay for it?

Statewide Standards

How can we institutionalize change?

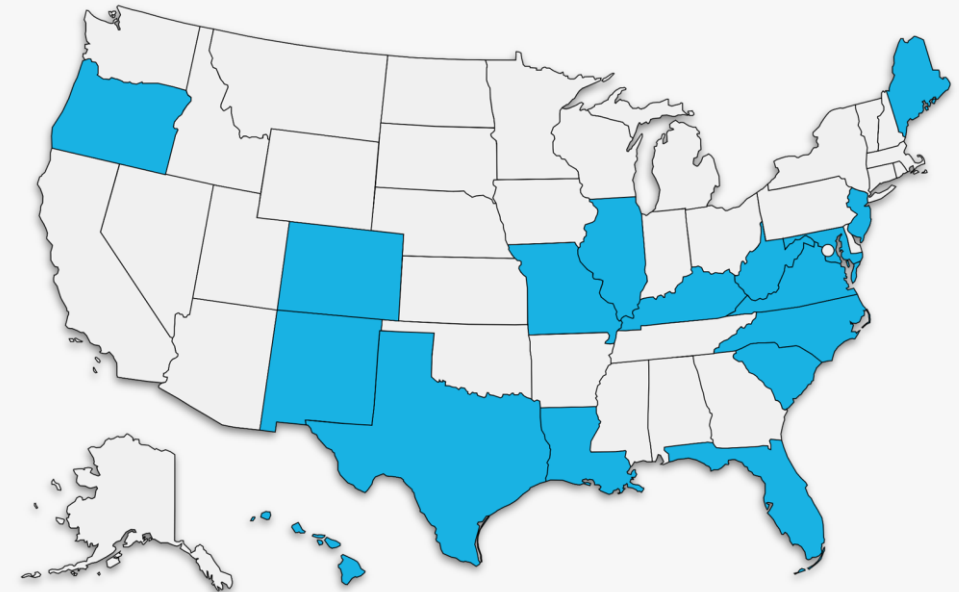




AFC has been engaged in the development of statewide flood plans throughout the country

- AFC is a resource and thought partner for policymakers across the country.
- We have a strong history of engaging in state planning efforts:
 - Participating in working and technical advisory groups in Maryland, North Carolina, South Carolina, and Texas.
 - Serving as trusted subject matter advisors in Florida and West Virginia.

We engage with a cohort of senior resilience and water leaders from states around the country





AFC has identified best practices for state flood planning

- + States should develop an actionable **statewide strategy** for risk reduction with **clear, measurable goals** to guide decision-making and prioritization.
- + States should establish a consistent and fair **methodology to rank local and regional projects into a prioritized list and quantify the funding needed** statewide.
- + States should **use flood-risk data** in all planning and programs across the state to save taxpayers money and better protect residents.





State plans fall on a spectrum from listing priority projects to having a strategy to accomplish broad resilience goals

Florida

Prioritized list of local flood reduction projects, without actions for DEP.

South Carolina

Broad strategy that considers accountable entities and costs for projects.

New Jersey

Six strategic priorities with interagency considerations, but no specific projects.

West Virginia

Suggestions for state agencies, federal partners, and local jurisdictions.

Priority
project
list

Broad
resilience
strategy

Texas

Prioritized list of flood reduction projects and actions for Texas Water Development Board.

Maryland

A combination of specific actions for state agencies and broad statewide goals.

Colorado

Statewide broad priorities, with lead agencies for each action.





An interagency approach is critical for alignment in both development and implementation of a statewide plan



South Carolina Statewide Plan

- Identifies specific actions that fall under the responsibility of various agencies
- Includes action-oriented recommendations that name the “involved parties”: state and federal agencies, academic partners, etc.



New Jersey Resilience Strategy

- Developed with the New Jersey Interagency Council on Climate Resilience.
- The CRO leads both the Interagency Council and the strategy.
- Promotes coordinated governance, including the Interagency Council, local governments, and others.





Buy-in across the state is only possible with intentional coordination at multiple levels

Interagency Coordination

- **Why it's important:** Aligns agencies and sectors on statewide priorities while encouraging efficiency.
- **State example:** Colorado Resilience Working Group convenes agencies to oversee the state resilience plan.
- **Opportunity in Virginia:** By leading the Interagency Resilience Management Team, the CRO can track progress with other agencies and increase accountability.

Regional Coordination

- **Why it's important:** Aligns broad state strategies and state resources with specific, local priorities and projects.
- **State example:** Texas Regional Flood Plans come together under a single statewide plan.
- **Opportunity in Virginia:** Planning District Commissions could lead regional planning and coordination.





The plan evaluation process is invaluable to keep goals on track and to reflect statewide need

Consider the following when developing the plan updating cycle:

- Ensure the plan can act as a **living tool** to drive decision-making.
- Establish an evaluation **timeline that keeps up with evolving circumstances**.
- When convening stakeholders, **balance accessibility and technical conversations**.
- Track **clearly established metrics**.
- **Communicate** updates and remind everyday residents why this work remains important so it can continue.
- To **ensure continuity amidst change**, brief new agency leadership on the importance of flood resilience work.





Virginia has the opportunity to lead other states in flood resilience planning



Establishing flood risk reduction goals that align all efforts at every level of government.



Aligning on action-oriented strategies across state agencies to mobilize the full force of government.



Developing a methodology to establish a list of prioritized state and local flood risk reduction projects and a pipeline for funding them.





AMERICAN FLOOD COALITION

Contact Us



Catie Malone

State Policy Associate
catie@floodcoalition.org



Gian Tavares

State Policy Director
gian@floodcoalition.org

More resources available at:
floodcoalition.org and stateresilience.org



Questions to Guide Discussion for Each Action

- Considerations for ranking priority level (short, medium, or long term)?
 - What level of effort or resources will be required to complete this action?
 - What is the estimated timeframe to complete this action?
 - What would it look like for this action to be successful?
 - Are there any actions that must be completed before this action can proceed?

Wrap-Up & Next Steps

Next Steps to Virtual Feedback Session

**Draft
Actions**



**In-Person
Workshop
Feedback**



**Metrics Webinars &
Feedback**



**Draft
Implementation
Roadmap**

Question to Guide Discussion

- How can state agencies maintain focus on long term (5+ year) actions?

NEXT ENGAGEMENT OPPORTUNITIES

Implementation Roadmap

- Virtual Feedback Session: July 22nd 10:00 – 11:30 AM
- Workshop Feedback Survey: Complete by July 1st

Scan here to take the survey!



Krista Jankowski

krista.jankowski@arcadis.com



Web dcr.virginia.gov/resilience-planning

Newsletter dcr.virginia.gov/signup

Email flood.resilience@dcr.virginia.gov

