Virginia Coastal Resilience Master Plan: Phase II

Appendix D

Initial Draft Recommendations of the Coastal Resilience Technical Advisory Committee (TAC)

DCR
Virginia Department of Conservation & Recreation

VIRGINIA COASTAL
RESILIENCE
MASTER PLAN

Initial Draft Recommendations of the Coastal Resilience TAC

Department of Conservation and Recreation | Office of Resilience Planning

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Introduction

To support Phase II of the Coastal Resilience Master Plan (CRMP), members of the Coastal Resilience Technical Advisory Committee (TAC) developed a set of recommendations to address severe and repetitive flooding in coastal Virginia. This document outlines the initial draft recommendations developed during the 2024 quarter two (Q2) meetings by the four TAC subcommittees:

- Research, Data, and Innovation
- Project Prioritization
- Funding
- Outreach and Coordination

Recommendations submitted by members via email following the Q2 TAC meetings are italicized. The final recommendations of the TAC evolved significantly over the course of multiple meetings, incorporating feedback and insights from ongoing discussions, as well as individual contributions gathered through surveys and worksheets between meetings. The final approved recommendations are presented in their refined form in Chapter 3 of the main body of the CRMP. Detailed information on how these recommendations progressed, are available via the TAC meeting recordings, materials, and minutes, are available on DCR's website.

A. Research, Data, and Innovation Subcommittee Initial Draft Recommendations

1. Support research on economic valuation of nature-based infrastructure that includes blue carbon and other ecosystem services, including agricultural, wildlife, and other relevant values that have been difficult to measure.
2. Support research to evaluate flood reduction metrics of natural and nature-based solutions. Establish topic-specific, standing, and ad hoc sub-working groups to track research progress on needed research and data gaps, identify research priorities regularly, and catalyze teams to secure funding from applicable RFPs.
    a. Compound flood modeling,
    b. Human dimensions of adaptation behavior,
    c. Socio-Economic impacts,
    d. Emerging best practices from other states addressing flooding
3. Support research, monitoring, and modeling of groundwater levels and saltwater intrusion.
4. Consider researching a Virginia flood-centric SVI dataset to inform project prioritization.

5. *Support research on next generation Social Vulnerability Indices (SVI) and understanding of climate justice, cultural and historic resources, including a Virginia flood-centric SVI dataset to inform project prioritization.*
6. Research [planning?, design?, regulatory?, legal, financial?] obstacles that exist at the local scale, and what innovations are required at the state level to meet local needs innovatively and effectively.
7. Conduct a synthesis fully analyzing how other states are addressing the issue of coastal flooding to provide context to the approach we are using thus far and in the future.
8. Support research to evaluate the benefits and costs of resilience action and of failing to take resilience actions.
9. Conduct research to generate a better understanding of human adaptive behavior (e.g., tipping or trigger points for choices, incremental adaptive behavior at the individual, organizational and community scales).
10. Develop measures and methods to monitor performance of resilience projects (dashboards including ecological, infrastructure, social, economic, cultural, and justice indicators), including sensor, drone, and other smart-tech data gathering and analysis methodologies.
11. Support multi-institutional efforts to collate quantitative AND qualitative data on modeling, risk assessment, and planning decisions in Virginia.
12. Integrate groundwater data with existing flooding and infrastructure risk datasets. (inter-agency and centralized).
13. Develop comprehensive bridge deck elevation data.
14. Consider drone usage for collecting data.
15. Consider modeling flood loss estimates that consider agricultural and wildlife habitat value in BCA tools for considering new projects and studies.
16. Provide training opportunities at the local scale to utilize and apply new data and identify additional gaps in data needed for flood resiliency planning at the local scale.
17. Identify ways to learn how useful and successful the data is for localities to use. Collect customer feedback, follow up, and iterate.
18. Disseminate/visualize data to preserve privacy of individuals, and develop protocols for identifying sensitive data, ensuring ethical research methods and conduct (e.g., supporting research that undergoes Institutional Review Board procedures).
19. Develop a mechanism to update data over 4-year time horizon.

20. Identify critical data needs for resilience planning and develop a plan for regular funding for acquisition, processing, and analysis.
21. Expand the support for innovation ecosystem programs to support emerging resilience and adaptation innovations.
22. Conduct use-inspired collaborative R&D between public and private partners on adaptation solutions including:
    a. NBS that simultaneously meet water quality and water quantity standards
    b. Enhance marsh plant production
    c. Alternative septic
    d. Wells – saltwater intrusion
    e. Beneficial dredge use
    f. Property scale monitoring technologies (sensors, drones)
23. Develop policy innovation tools to allow responsible, rapid policy adaptation and experimentation e.g., establish experimental zones – R&D, but also Policy Zones, with Resilience principles, goals that must be met – to receive tax incentives, regulatory discretion, permit integration and coordination (see the integration team efforts of the SF Bay restoration program, Green Tape Cutting Initiative).
24. Identify regulatory barriers to testing out innovative resilience practices.
25. Develop statewide strategy to support co-production of initiatives/products/future research needs with stakeholders, including mechanisms to engage and incorporate community and stakeholder input into research, data visualization, and project implementation.
26. Create environments that help move from information sharing to creation of knowledge.
27. What is the role of local/regional/state agencies in supporting local/regional resilience champions?
28. Define what resilience success looks like.
29. Identify mechanisms for future collaboration amongst diverse stakeholders.

B. Project Prioritization Subcommittee Initial Draft Recommendations

1. Use the CFPF to implement the CRMP.

2. It's still problematic that the CRMP and the Community Flood Preparedness Fund are not directly connected. Using the CFPF to implement the CRMP or the VFPMP would go a long way towards getting buy-in.
3. The scale of the CRMP is too large to have a useful implementation plan, unless that plan is focused on policy or programmatic changes. The level of geography at which on-the-ground implementation will be done is mostly within individual jurisdictions. It's unclear how the CRMP supports that work.
4. Take temporal aspects into account when developing clear plan purpose and goals. Clarify what the timespan is, expected to help short-term, mid-term, long-term? And what does that do to our costs and investments long-term?
5. Include mention of path-dependency as an issue that can cause future challenges in adaptation due to actions taken right now to address current problems. As an example, think of the so called "levee effect" whereby research has demonstrated that in many instances, development of structural protections has often led to greater future losses in "protected" areas when the infrastructure is overwhelmed. This results because the perceived safety offered by infrastructure increases development and investment, all of which suffers when the infrastructure is overwhelmed. And infrastructure is often overwhelmed as we typically build, at most, to a 1% annual chance event, which itself is an arbitrary standard, not a safety standard.
6. Have a few detailed project alternatives, possibly a low-cost, med-cost, and high-cost alternative so localities aren't being bombarded with expensive and intensive projects that they need to do without the capacity and funding to do them. Recognizing that even a small step is a step makes seeking outcomes a lot less overwhelming for our more stressed localities.
7. Balance PROCESS metrics with OUTCOME metrics – Design outcomes and how they are determined.
8. Frequency, magnitude – Strategize with tracking.
9. Survey stakeholders to learn what they consider critical data to inform decision-making, and what data is missing.
10. Utilize/survey flood management practice data to supplement flood hazard data for a full picture of flood risk and vulnerability.
11. Map data needs across the entire “supply chain”, (i.e. program-wide KPIs to vulnerability assessment data to project scoring criteria) and come up with plan to fill any gaps.

12. Continue state inter-agency coordination efforts aimed at the development, maintenance, and enhancement of accessible region-wide asset datasets for non-sensitive data, and to ensure that agencies aren't duplicating efforts.
13. Establish programs to encourage coordination and cost savings for data collection. Ex. real-time flood data from sensors. Create an intuitive system to index, document, search, and analyze data using FAIR (Findable, accessible, interoperable, reusable) principles across agencies (https://internetofwater.org/valuing-data/making-public-data-fair/).
14. Create a standard going forward that is interoperable to ensure high-quality data that can be used by various agencies in the future. Potentially rework older data that is less usable.
15. Create a one-stop-shop platform to host data for all state agencies, starting with coastal resilience data.
16. Have a standard to ensure all ingested data has a process for curation, de-identification, de-duplication, and a safe and secure way to identify characteristics about all data elements. This will allow everyone to know that data has been contributed and available.
17. Expand availability and use of real-time data (e.g. real-time flooding) to assist in response. Increase use of real data instead of projections and historic data.
18. Consider forward-looking/future-conditions data for all components of flood risk (hazard, exposure, vulnerability). Examples include SLR, precipitation frequency (Atlas 15, MARISA), projected growth, demographic changes, etc.
19. Analyze historic trends of flooding to look for recent increases in flooding events and damage. This will help to identify what areas are more likely to have more immediate increased impacts with climate change.
20. Integrate criteria for weighting of actions that balances need/desire for action on today's impacts with evaluation of the feasibility of long-term viability of an area. Determining "long-term viability" is clearly not an objective process, but the difficulty of engaging in such a discussion is to engage community and thus provide learning opportunities.
21. Consider compounding hazards like SLR and coastal surge to project and estimate future conditions to identify flood resilience needs.
22. Establish criteria that is multi-faceted and addresses both vulnerability and solutions that identify the greatest needs.

23. Develop an initial needs assessment for coastal flood resilience, like exists for wastewater or Ag, and a process to update it as an element of the plan.
24. Provide support to localities on developing locally specific weighting for prioritization of projects utilizing CRMP data.
25. If there are no planned actions, establish state staff/consultant team program to reach out to local government to identify if they are not interested in actions or what factors (staff, funding) would support developing actions.
26. Coordinate with local governments to ID flood prone areas. Talk to residents and other stakeholders and work to address their concerns.
27. Include section in final report(s) discussing outliers in responses (disproportionately high or low) and plans to address in subsequent iterations.

C. Funding Subcommittee Initial Draft Recommendations

1. Track the data on real estate analysis and recognize the detrimental impacts of water in relation to the tax base.
2. Existing real estate land value and building values should be tracked annually to report when local tax revenue slippage is occurring in areas at risk to flooding, sea level rise, saltwater intrusion, marsh migration, or other related environmental changes.
3. Identify specific financial needs for private and public projects.
4. Ensure matching funds are tracked to identify or validate contributor expectations. Determine a justifiable financial report that portrays flood damage trends.
5. Determine future efforts to set metrics for flood resilience.
6. Develop financial tools and reports to more clearly explain the immediate and mid-term cost of doing nothing at the local level.
7. Develop and promote tool for localities to track flood damages, especially minor flood events where FEMA doesn't get involved in reporting.
8. Engage with special interest groups to determine what is important to adapt the messaging and data to fit their interests and motivate potential investments.
9. Make the case to state legislators using project prioritization and project readiness.
10. *Ensure businesses, government officials, citizens and other stakeholders are aware of the financial opportunity from economic development potential of innovative resilience and adaptation technologies, products, services and designs created in Virginia and sold to an emerging global market.*

11. Consider complexity of metrics and various types of stakeholders.
12. Connect economic benefits and other benefits outside of resilience improvements to resilience-focused projects.
13. Consider recommendations for private properties and for public properties.
14. Ensure that all businesses are aware of financial impacts that may threaten their businesses associated with water.
15. Determine what the existing and available funding resources are.
16. Evaluate existing state grant funds such as the Flood Fund which primarily supports short term projects and maybe should be looking longer-term. Consider additional funding mechanisms that may be needed for longer-term challenges, e.g., strategic relocation, saltwater intrusion into public drinking water systems, infrastructure abandonment, etc.
17. *Identify opportunities for inter-regional revenue and cost-sharing methods and programs, e.g., if one community provides a resilience benefit that supports other communities within the region, then there may be a means of providing revenues to maintain and enhance that resilience benefits; similar to the Catskill Watershed Corporation, or other governance tools (wetlands banks, nutrient trading, transferable development rights, conservation easements).*
18. Consider fight the flood initiatives as a framework for additional state support.
19. Establish state program for non-federal match with multi-year projections and eligibility criteria so localities can plan for state or federal funds on a timeline.
20. Identifying revenue sources for projects that don't receive grant funding, including loan options.
21. Consider impact bonds/type of performance metrics.
22. Simplify the process to connect the flood resilience need to the pursuit of funding.
23. Review reimbursable grants and management of cash flow.
24. State agencies develop new mechanisms to allow for more flexibility with funding grant reimbursement.
25. Identify opportunities for public private partnerships in pursuing prioritized resilience projects.
26. Define & outline who the funding is for (public vs. private).
27. Provide clear rules and concise guidance for obtaining and using funding to ensure consistency and predictability.

28. Ensure funding prioritization is politically agnostic.
29. Consider how to secure resources for the future beyond M&O costs, e.g., strategic relocation of key public assets, iterative adaptation measures to update existing resilience projects, etc.
30. Research resources for future, or iterative adaptation measures.
31. Determine what we are trying to accomplish and where we can make the largest impact. Review return on investment calculations for pursuing federal dollars.
32. Identify crossover benefits of prioritized resilience projects at the local, regional and Commonwealth level as a starting point for potential pooling of resources to get projects completed.
33. Enhance the state's ability to further evaluate local flood resilience needs.

D. Outreach and Coordination Subcommittee Initial Draft Recommendations

1. Encourage state agencies to leverage the plan through representation on the TAC.
2. Show value of the plan to stakeholders by increasing coordination with local government departments to pinpoint areas of flooding complaints, then target those areas with increased coordination (by getting into the communities with informative town hall meetings, etc.)
3. *Determine a strategy for how to get local governments and stakeholders interested.*
4. *Periodically review and assess plan uptake progress and pivot strategies.*
5. Given budget constraints, identify a comprehensive list of available funding (state, federal) opportunities to support plan initiatives.
6. Recognize capacity constraints that prevent plan uptake and try to find ways to bridge those gaps.
7. In assessing partner capabilities/constraints, think about ways to build support network for grant writing.
8. Define issues and explain how they impact underserved communities.
9. Hold webinars/demonstrations of tools available with interested local governments and stakeholders to increase visibility of what we have that others can use. Make simplified and short tutorials for people to learn in their free time.
10. Provide education to community groups.
11. Conduct trainings/workshops on materials/tools.

12. Coordinate activities among agencies to minimize participant fatigue and show that participants' input is utilized.
13. Capture data via coordination with other agencies.
14. Increase awareness of online tools available to local stakeholders.
15. Increase outreach efforts via social media.
16. Utilize state office that can help with language of the messages.
17. Go to a community before and after a flooding event and capture metrics to see if plans are working.
18. Coordinate with community groups who must react to resilience events to understand how they typically respond.
19. Eliminate barriers to attend meetings and do what is possible to go to people/meet people where they are.
20. Listening to groups and understand and respect word choice/approach to establishing relationships.
21. Develop a strategy to take action to work with different groups to obtain trust.
22. *Incorporate stakeholder suggestions and feedback into future actions taken related to the plan.*
23. Partner with localities to investigate best cultural format for distributing information.
24. Identify highest at-risk populations specifically for Virginia and curate outreach initiatives for those needs (e.g., elderly in retirement, men aged 15-30, etc., whoever is assessed to be at the most risk for flood hazard).
25. Engage with non-English media outlets on outreach efforts to raise awareness of issues and resources available – TV, radio, print, etc.
26. Engage with media outlets in languages other than English.
27. Provide interactive community events that encourage engagement and provides education.
28. Join Community Action Groups to present information on flood resilience.
29. Identify outlets and see if they overlap with those who haven't been participants.
30. Commit to plain English to translate/describe/explain flood mitigation activities and challenges throughout the full process.
31. Provide a consistent message.