Virginia Coastal Resilience Technical Advisory Committee (TAC)
Project Prioritization Q4 Subcommittee Meeting Minutes

Subject	TAC PP Subcommittee Meeting 2023-Q4	**Date**	10/31/23
Chair	Marcus Thornton, Deputy Chief Data Officer, OGDA	**Time – START/ADJOURN**	10:30am/11:56am
Location	Zoom	**Scribe**	Addie Alexander VCU CPP

Subcommittee Members

Last Name	First Name	Agency	Virtual √
Pfeil	Ken	Chair, ODGA	
[Thornton]	[Marcus]	[Co-Chair]	√
Singleton	Kellen	Accomack-Northampton Planning District Commission	√
Krolikowski	Jack	American Flood Coalition	√
Ellington	Jay	Crater Planning District Commission	√
Wells	Matthew	DCR	
McFarlane	Ben	Hampton Roads Planning District Commission	√
[Katchmark]	[Whitney]		√
Heath	Brianna	Northern Neck Planning District Commission	√
Stewart	Sarah	PlanRVA	√
[Podyma]	[Eli]		√
Swanson	Chris	Virginia Department of Transportation	√
[Berg]	[Christopher]		√
Green	Jamie	Virginia Marine Resources Commission	
[Owen]	[Randy]		
[Peabody]	[Rachael]		
Whitehurst	Scott	Virginia Port Authority	√
[Vick]	[Cathie]		
Stiff	Mary-Carson	Wetlands Watch	√
[Bateman]	[John]		

Invited Guests

			Virtual
Mitchell	Molly	VIMS	√

DCR Staff / Other Support

			Virtual
Smith	Andrew	DCR	√
Dalon	Matt	DCR	√
Heaps-Pecaro	Carolyn	DCR	√
Geiger	Stu	Dewberry	
Batten	Brian	Dewberry	√
Greenspan-Johnston	Johanna	Dewberry	√
Wood	Wheeler	Center for Public Policy VCU	√

Reference Links	
Item	**Link**
Meeting Agenda	https://townhall.virginia.gov/L/GetFile.cfm?File=meeting\49\38764\Agenda_DCR_new_v1.pdf
Meeting Handouts/Presentation Slides	https://www.dcr.virginia.gov/crmp/meeting/document/project-prioritization-handouts-20231031.pdf
Video Recording of the Meeting	https://youtu.be/Rs9hEKbOWt0

Agenda Item	**Minutes**
1. Call to Order, Roll Call, Introductions	Marcus Thornton, co-chair, called the meeting to order at 10:30am. Members took attendance, the meeting agenda was adopted, and the Q3 subcommittee meeting minutes were adopted. Invited guests: Ms. Heaps-Pecaro (DCR) introduced Dr. Molly Mitchell of the Virginia Institute of Marine Sciences. Ms. Carolyn Heaps-Pecaro (DCR) reviewed the subcommittee objectives and schedule, and shared updates: 1. The Web Explorer User Portal is live 2. DCR has received and is reviewing responses to the resilience planning and consulting RFP for support with the flood protection master plan and community outreach
2. Old Business	Ms. Heaps-Pecaro (DCR) reviewed feedback from the Q3 meeting: 1. It was expressed that the intended audiences needed to be clarified 2. Secondly there was a suggestion that DCR contextualize what flooding means for those intended audiences 3. Lastly guidance is needed to inform actions

3. Updates and Discussion	DCR has been working on defining intended audiences, determining asset groupings, and setting minimum standards for impact assessment. Dewberry has been helping with this and is on the call. They are developing a scope for the impact assessment, which the subcommittee will be invited to provide feedback on. In addition, Ms. Heaps-Pecaro shared that the subcommittee's feedback is requested on the end-user survey, the natural infrastructure asset grouping and assessment, and the alternative metrics for jurisdictional capacity. Response to previous feedback: 1. Impact assessment in the planning cycle a. The purpose is to support planned end users to identify and understand vulnerabilities to flooding, and to prioritize use of resources. End users' actions supported by these products could include setting goals and establishing metrics, selecting projects, identifying and instituting policies, and seeking funding. b. The key products of this planning effort are in dark blue on the flowchart on the slide, and include: the flood hazard exposure model, flood hazard impact assessment, financial needs quantification and funding guidance, planned resilience action analysis (CRWE user portal). 2. Who are the intended audiences? a. PDCs, localities, state agencies/ programs, and tribal governments that are active in the coastal region. b. Thoughts on how they would use the plan include: i. Used as a starting point for additional asset and vulnerability assessments ii. Incorporated into other long range planning efforts iii. To leverage findings to prioritize resilience action iv. Identifying opportunities for collaboration with others with shared interest v. To justify budgetary requests c. Highlighted what DCR has heard previously around how people want to use CRMP through a survey during Phase I. i. The results are available as an appendix on DCR's website in the CRMP There is interest in a Phase II end-user survey focused on how people used the Phase I plan, including the web explorer and data explorer. The funding subcommittee is also interested in knowing how localities and others are accessing funding for resilience, what mechanisms they're using, and what issues they have. The plan is to send the survey to intended end users and consultants who are working on resilience issues with localities. The plan is to issue this in November and receive responses before the end of the year. The survey will be shared through DCR's contacts, requesting that they share it with those working on flood resilience, PDCs, tribal governments, and posting it on the website. Since many members of

	the subcommittee represent PDCs and others, meeting participants are invited to share their thoughts on the survey. Ms. Heaps-Pecaro reviewed the draft survey and opened the conversation for subcommittee discussion: 1. Chris Swanson (VDOT) suggested working through VACo or the PDCs 2. Sarah Stewart (PlanRVA) said they would help distribute the survey. She also asked whether it would go to locality staff who would be involved in identifying and implementing projects, or if the idea is to share it with people in other roles within local governments (i.e. elected officials). a. Ms. Heaps-Pecaro responded that DCR was thinking of sending the survey to staff, but has the option of respondents sharing if they are in a different role in local government; there is no opposition to others responding, though the type of questions included in the survey may be best answered by staff. For funding questions there could be city council or other folks interested in responding. 3. Ben McFarlane (Hampton Roads PDC) shared that they are happy to share the survey with their localities, and suggested following it with a workshop or opportunity to walk attendees through the master plan and receive feedback. He also suggested hearing more from state agencies' attendees about their goals for the plan, as localities are doing their own resilience planning. 4. Chris Swanson responded to Ben McFarlane, sharing that VDOT sees this plan as a launching point for their resilience plan, which they are looking to refine. It could also inform the refining of their vulnerability assessment to make sure the plans are consistent, even though VDOT's vulnerability assessment will look at data more specific to their agency. Other state agencies may rely on the CRMP entirely, or do more. 5. Ms. Heaps-Pecaro recognized Mary Carson's (Wetlands Watch) comment in the chat and expressed thanks for her willingness to share the survey with the CRS workgroup 6. Lastly Ms. Heaps-Pecaro invited everyone to send her additional comments via email The discussion moved on to the impact assessment as a component of the plan; some of the information provided can be found in Appendix E of the Phase I plan. Ms. Heaps-Pecaro reminded the subcommittee that the impact assessment is applying models for pluvial and fluvial flooding to assets in the coastal region to understand impacts of flooding and shared the following: 1. What are the assets? a. These are mostly staying the same from Phase I to II b. The assets are included in the table on the slide, which shows the small changes to how DCR is thinking about the asset groupings c. Results of that assessment will be reported at the jurisdictional scale and at the watershed scale for Phase II

	2. In addition to assets, in Phase I DCR looked at community context, including social vulnerability and jurisdictional resources and capacity. They were considered, but not directly assessed for flood hazards. 3. New asset groupings: a. additional critical infrastructure sectors to align with VDEM and CISA approach. i. VDEM is working on standing up a critical infrastructure working group with state agencies and critical infrastructure owners. That group will be responsible for identifying what is critical, and how infrastructures rank according to national approaches. ii. Additional sectors that would align with VDEM sectors include those listed on the slide. iii. Not all assets will be able to be analyzed similarly in the impact assessment. iv. These will be reorganized under human and built categories v. DCR will maintain approach focus on exposure b. DCR is also revising natural infrastructure components 4. Impact Assessment Approach–what level of assessment? a. Phase I had 4 different levels: narrative, exposure, vulnerability, or risk. b. These elements build upon each other: i. Exposure looks at if an asset will experience flooding, yes or no ii. Vulnerability looks at exposure combined with sensitivity and adaptive capacity, so you need more information on the assets iii. Risk considers quantification/ categorization of the consequences of the vulnerability, so this level needs additional inputs c. Takeaway: at this scale, quantitative approaches are limited by the available data d. It is important to consider what level of analysis is most useful to end users. What is appropriate for this state level plan focusing on flood resilience across all sectors? 5. DCR is also thinking about risk as levels of criticality, direct and indirect consequences, not just financial as in phase I. 6. Hazard inputs include: a. Coastal hazards: using phase I data and conducting highest available level of analysis b. Riverine hazards: the only data available is on current special flood hazard areas, so analysis will be on limited categorical vulnerability, e.g., is it in or out of a flood plain, is it a critical asset, etc. c. Pluvial hazards: DCR is producing data now and will conduct highest available level of analysis d. DCR is also looking at exposure for all three hazards 7. Levels of assessment for different groups of assets during Phase I plan are outlined in the slide

	a. DCR assessed vulnerability and exposure for certain assets, including population and critical infrastructure. b. In terms of risk, DCR looked at risk to structures by calculating average annual loss to quantify direct financial impacts of losing the structures and their contents. 8. Approach to output metrics in Phase II: a. DCR will start with the same data and methodology from phase I b. DCR will take an iterative approach to move from exposure to risk where feasible i. This will require identifying data availability c. DCR plans to conduct a unique impact assessment by asset for each flood hazard d. DCR will present by individual flood hazard and hopefully find a way to communicate combined impacts for all for different assets 9. Phase I metrics are all included in black on the slide; opportunities for additional metrics are included in italicized gray: a. For exposure: using social vulnerability as a lens to look at annualized population exposure b. Under vulnerability: there was a measure for population displacement during Phase I but it wasn't used because it was not nuanced enough; that information could be presented during Phase II to identify hot spots for displacement. c. For risk: it would be possible to quantify the value of assets lost or exposed. During phase I that was conducted just for structural elements, but there could be opportunities to do that for ecosystem services value and potentially additional measures of criticality. 10. How DCR will report findings a. During Phase I, asset-level reporting was not shared externally but was produced, as well as narrative impacts in the plan to help contextualize the numbers, tabular data across jurisdictions was available for download for different asset groupings, and comparative and gridded hot spot identification were available as layers, included in the PDF plan, and were available for GIS download. b. For phase II: DCR intends to build on Phase I to update summaries for all hazards and assets, include impact stories, additional hotspot and gaps analysis, and leveraging data from coastal resilience web explorer user portal about ongoing projects, and include summaries of impacts across PDCs and localities using polygon format, tabular and shapefile data to include additional outputs for all metrics, and decision-making support in the form of case studies and technical assistance, in response to this subcommittees feedback from the last meeting about providing guidance after the plan is complete. 11. Chris Swanson talked about VDOT assets in the impact assessment a. There is a suggestion that the CRMP stays consistent evaluating this sector b. VDOT's level of analysis is specific to the transportation industry

c. VDOT is working on this analysis now, which may not be ready in time for the CRMP, so the suggestion is that the transportation analysis stays within VDOT, and the agencies will work together to keep each other informed of data availability and how the plans are developing.
d. VDOT doesn't know how their planning outcomes will be used publicly yet, so they recommend having two separate efforts

12. Brian Batten (Dewberry) commented that the vector data on road vulnerability produced during Phase I is available, but it was decided not to show that in the viewer. Chris Swanson responded that VDOT's approach will be by the road segment in vector form, but that it may be appropriate to keep it raster so that it isn't perceived as a one-to-one comparison.
13. Ms. Heaps-Pecaro shared DCR's approach to natural infrastructure
    a. During phase I, the plan looked at natural assets similar to other assets, but there was not a lot of differentiation between the levels of asset groupings. Land lost and habitat lost or endangered were primary output metrics.
    b. Input data came from VIMS and NOAA.
    c. For phase II, DCR is considering a less hierarchical approach to allow that assets may overlap across different categories.
        i. They would categorize natural infrastructure via type, but also think about how those resources are prioritized, i.e., are they ecological priorities, working lands, etc., and if there is capacity for migration. That is open for subcommittee discussion today.
        ii. For output metrics, land and habitat loss are still valuable metrics, but others could be considered, like proximity to flood risk, for example.
    d. To get to those groupings of assets, DCR proposes using existing datasets; examples included on the slide, including DCR natural habitat and ecosystem priorities, DCR potential rare species richness layer, The Nature Conservancy's resilient and connected network, and the VIMS opportunity for wetlands migration layer. Feedback from the subcommittee is requested.

Ms. Heaps-Pecaro then opened it up for discussion on natural infrastructure issues, as well as any other feedback on the phase II impact assessment:

1. Molly Mitchell (VIMS) shared that there is a new marsh migration product coming out that they collaborated with the Chesapeake Bay Trust on; it combined NOAA, SLAMM, and inVEST modeling that had previously been done and applied it across Chesapeake Bay.
2. Mary-Carson Stiff (Wetlands Watch) asked about how the assessment will take into account some of the additional benefits that are provided by natural infrastructure. She asked if the vulnerability measurement is part of what's being looked at related to habitat, and what is being included in vulnerability and how losses are being measured.

	a. Ms. Heaps-Pecaro responded that during Phase I, the vulnerability for natural infrastructure looked at change in tidal zones/change in open water areas, and whether a habitat/land is permanently inundated with water and changes in depth in marsh areas. These measures led to determination of "land/habitat lost". b. VIMS and others are working on ways to measure ecosystem value of those different habitats that could be used to reach financial metrics of the acreages of lost. c. Molly Mitchell shared that they have a NOAA-funded project to look at evaluation for different shoreline habitats based on values like water quality, habitat, recreational value, mostly based on numbers from literature reviews. It does include carbon values, but that varies broadly across marshes, so there's more uncertainty than with other metrics. This is tied to market values, but is based on the amount of stock assumed to be held in the marsh. 3. It was asked when that effort will be completed a. Molly Mitchell responded that there are about 8 months left on the project b. Matt Dalon (DCR) shared that this is also being discussed in the funding subcommittee because this is related to financial metrics, which is also looking for other sources of metrics on ecosystem impacts. 4. Ms. Heaps-Pecaro read a comment from Jack (American Flood Coalition) about normalizing these metrics across geographic scales to look at percent of assets exposed. a. Johanna Greenspan Johnston (Dewberry) commented that all of the demographic information was attributed to building footprint scale for statistical analysis purposes, not for public-facing purposes. They also used gridded cells of around 1200 ft to synthesize information on hazards, point-based assets, residential building footprints, etc. That allowed for comparison across factors and scaling up to create summaries by geographic scale; they focused on jurisdictional scales. Those values can be indexed and compared within the geography of interest. Levels that could be high for one community might not be high relatively within the whole PDC, for example. 5. Mary-Carson Stiff asked for more information on what is meant by "measures of criticality/ scale of impact," as a potential phase II measurement of risk. a. Ms. Heaps-Pecaro responded that this could be applied to natural infrastructure, but also other types of assets, with the goal of assessing assets that are important to our society. For example, breaking out types of the most important critical infrastructure within an asset grouping. 6. Ms. Heaps-Pecaro reflected that the biggest change from Phase I will be to assess all flood hazards, including pluvial – rather than only coastal. DCR hopes that this will make the impact assessment more relevant to more communities in the coastal planning area that face less coastal flood risk.

4. New Business	Ms. Heaps-Pecaro shared asset input data for the impact assessment from Phase I across different themes, which are included in Appendix E in Phase I report.
	• DCR is working with Dewberry to identify the most up to date versions of datasets.
	• DCR is interested in the TAC's feedback about how to measure jurisdictional resources and capacity (capacity to understand and respond to conditions of flood risk)
	  ○ Phase I looked at the fiscal stress index from the last report from the commission on local government (from DHCD), which looks at a locality's ability to generate more tax revenue from its population to understand how the state should be distributing financial assistance.
	  ○ Is this an appropriate measure to use?
	  ○ DCR did survey localities during phase I, which was included as narrative context, which could be another opportunity.
	• HRPDC:
	  a. an issue with the fiscal stress index is that it only focuses on financial capacity, but planning capacity isn't covered. An assessment of locality staffing might be useful.
	  b. Fiscal stress index was the most familiar metric.
	  c. Debt capacity could be useful as some programs get more mature and that is an important limiting factor.
	• Ms. Heaps-Pecaro added that political will is also very important. Research and contact with the localities will also be useful.

5. Public Comment	No public comment was offered.
6. Action Items	Identified action items are: 1. Follow up with VIMS and Wetlands Watch about natural infrastructure assessment 2. TAC: if you have any comments, particularly on end-user survey, please send those to DCR via email 3. The next full TAC meeting is on December 15th via Zoom 4. Survey of preference times for these meetings show that people prefer Tuesday, Wednesday, and Thursday mornings so we will try to stick with those moving forward. The next meeting will be in person. The agenda will include updates to inputs on impact assessment, and starting to talk about recommendations for future plans.
7. Adjourn	Co-Chair Marcus Thornton adjourned the meeting at 11:56 am

The purpose of these minutes is to record and preserve, to the best of our ability, the major contributors and general topics covered during this meeting. Verbatim transcription is not the intent of this document. If you have any questions, please contact flood.resilience@dcr.virginia.gov