Virginia Coastal Resilience Technical Advisory Committee

Research, Data and Innovation Subcommittee Quarterly Meeting

Friday, May 24th, 2024, 10:00 am

All Virtual Meeting

Virtual Access: Register Online

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Name	Title	Organization
Alexander Samms (Chair)	Chief Deputy	Virginia Department of Environmental Quality
Dave Davis (Alternate Chair)	Manager of the Office of Wetlands and Stream Protection	
Whitney Katchmark	Principal Water Resources Engineer	Hampton Roads Planning District Commission
Ben McFarlane (A)	Chief Resilience Officer	
Norm Goulet	Director of NVRC's Environment and Resiliency Planning	Northern Virginia Regional Commission
Rebecca Murphy (A)	Coastal Zone Program Manager	
Dr. Jessica Whitehead	Director of the Institute for Coastal Adaptation and Resilience	Old Dominion University
Carol Considine (A)	Director of Applied Projects, CCRFR	
Dr. Karen McGlathery	Director of the Environmental Resilience Institute	University of Virginia
Dr. Mark Luckenbach	Associate Dean for Research and Advisory Services	Virginia Institute of Marine Science
Dr. Molly Mitchell (A)	Assistant Professor	
Dr. Troy Hartley	Director	Virginia Sea Grant
Dr. Wendy Stout	Director, Virginia Tech Coastal Collaborator Center	Virginia Tech
G. Michael Fitch, Ph.D.	Acting Director	Virginia Transportation Research Council
Mary-Cason Stiff	Executive Director	Wetlands Watch

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Meeting Agenda

1. Call to Order, Roll Call, and Introductions
2. Adoption of Agenda and 2024Q1 Meeting Minutes
3. Subcommittee Overview
4. Old Business
   - Integrated Flood Hazard Scenarios for Planning
   - Flood Hazard Data Update
   - Subcommittee Recommendations
5. Public Comment
6. New Business
   - Subcommittee Members Discussion
7. Action Items, Scheduling
8. Adjourn

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Research, Data, and Innovation Objectives

1. **Inform Development of Flood Hazard Exposure Model.**
    Using the best available data, provide recommendations to DCR and Dewberry to select pluvial modeling approach (including climate scenarios), advise on the selection of fluvial modeling data and scenarios, and advise on approach to compound flooding joint probability analysis.

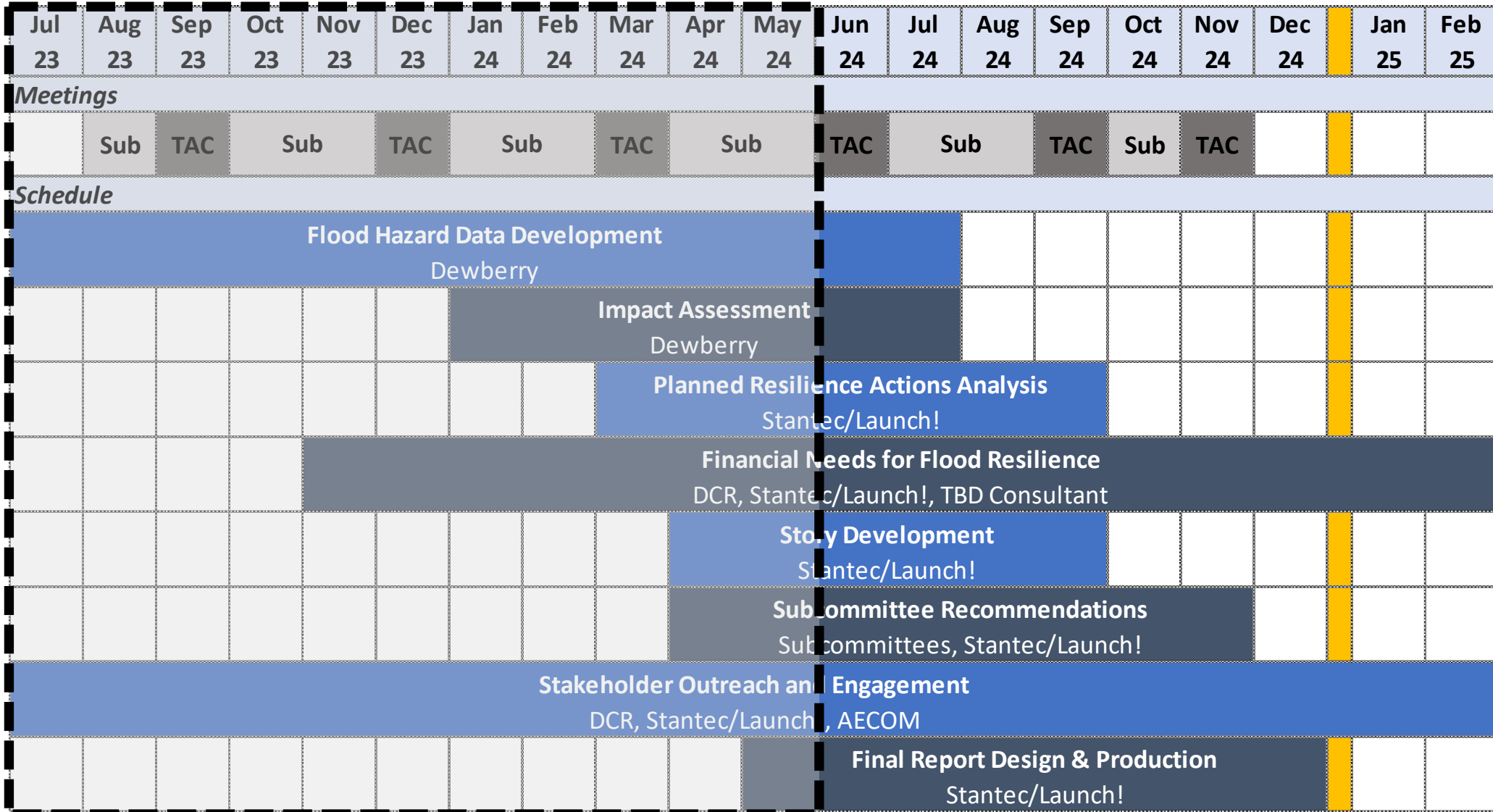2. **Inform Inputs to Flood Hazard Risk Assessment.**
    Based on the flood hazard exposure model developed, advise DCR and Dewberry on how to utilize the flood hazard model for conducting the flood hazard risk assessment.

3. **Develop recommendations for future planning.**
    This includes, but is not limited to:

    - Develop a data development plan to fill gaps in advance of future planning processes. **Consider research and data products that can meet the state's needs**.

    - **Advise on innovations suited to address flood risks and fill gaps in resilience action** for future planning efforts. Consider R&D, public-private partnerships, collaborative research.

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Plan Development Timeline

	Jul 23	Aug 23	Sep 23	Oct 23	Nov 23	Dec 23	Jan 24	Feb 24	Mar 24	Apr 24	May 24	Jun 24	Jul 24	Aug 24	Sep 24	Oct 24	Nov 24	Dec 24		Jan 25	Feb 25
Meetings																					
		Sub	TAC	Sub		TAC	Sub		TAC	Sub		TAC	Sub		TAC	Sub	TAC				
Schedule																					
Flood Hazard Data Development — Dewberry																					
Impact Assessment — Dewberry																					
Planned Resilience Actions Analysis — Stantec/Launch!																					
Financial Needs for Flood Resilience — DCR, Stantec/Launch!, TBD Consultant																					
Story Development — Stantec/Launch!																					
Subcommittee Recommendations — Subcommittees, Stantec/Launch!																					
Stakeholder Outreach and Engagement — DCR, Stantec/Launch!, AECOM																					
Final Report Design & Production — Stantec/Launch!																					

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Subcommittee Schedule

2023Q3	CRMP PII - Pluvial Modeling Pilot Study
2023Q4	CRMP PII - Flood Hazard Data Scenario Planning
	CRMP PII – Flood Hazard Data Reporting
2024Q1	CRMP PII – Flood Hazard Data Scenarios, Combined Flood Hazards
	Future Plans - Recommendations
2024Q2	CRMP PII – Flood Hazard Data Update
	Future Plans - Recommendations
2024Q3	CRMP PII – Flood Hazard Assessment Review
	Future Plans - Recommendations
2024Q4	
	Future Plans – Final Recommendations

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Old Business

CRMP Integrated Flood Hazard Scenarios for Planning

Flood Hazard Data Update

Subcommittee Recommendations

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CRMP2 Planning Scenarios and Data

	Reference Scenario		Planning Scenarios			
Time Horizon	2000-2020	Planning Horizon	Near Future ~2030-2060		Far Future ~2060-2100	
		Risk Tolerance	Moderate	Low	Moderate	Low
Coastal	2020 CRMP	Coastal	2040 CRMP	2060 CRMP	2060 CRMP	2080 CRMP
Pluvial	Atlas14	Pluvial	2020-2070 RCP 4.5 Median	2020-2070 RCP 4.5 90th %	2050-2100 RCP 4.5 Median	2050-2100 RCP 4.5 90th %
Fluvial	FEMA	Fluvial	FEMA	FEMA	FEMA	FEMA

Notes:
Coastal: 2020 CRMP MSL adjusted based on tidal observations. 2040, 2060, & 2080 CRMP based on NOAA 2017 Intermediate-High Relative Sea Level Rise Projection
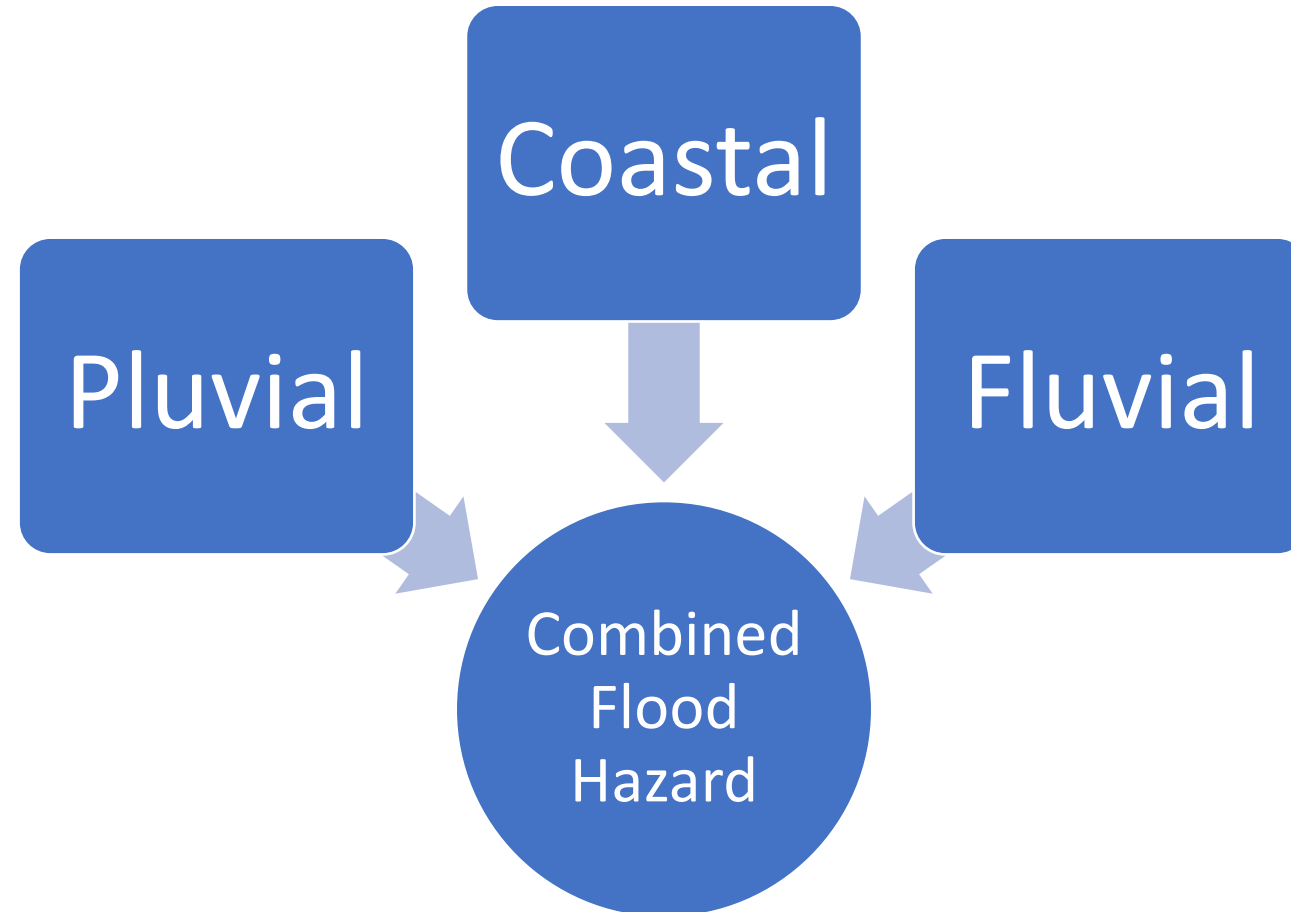Pluvial: Precipitation values from Atlas14 and MARISA RCP 4.5 will be rounded to the nearest interval based pluvial model using conventional rounding.

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Pluvial Flood Hazard Data

- Complete
  - Pluvial Modeling
  - Models and Results Uploaded to AWS Open Data Portal
  - 1,830 Subbasins
    - Non-Tidal = 63 Plans
    - Tidal = 315 Plans
  - Planning Scenario Reference Table
- Work in Progress
  - Building Planning Scenario Depth Grids
  - Users Guide Development

Legend
- Model Boundaries
- Virginia State Boundary

0 10 20   40   60   80   100
Miles

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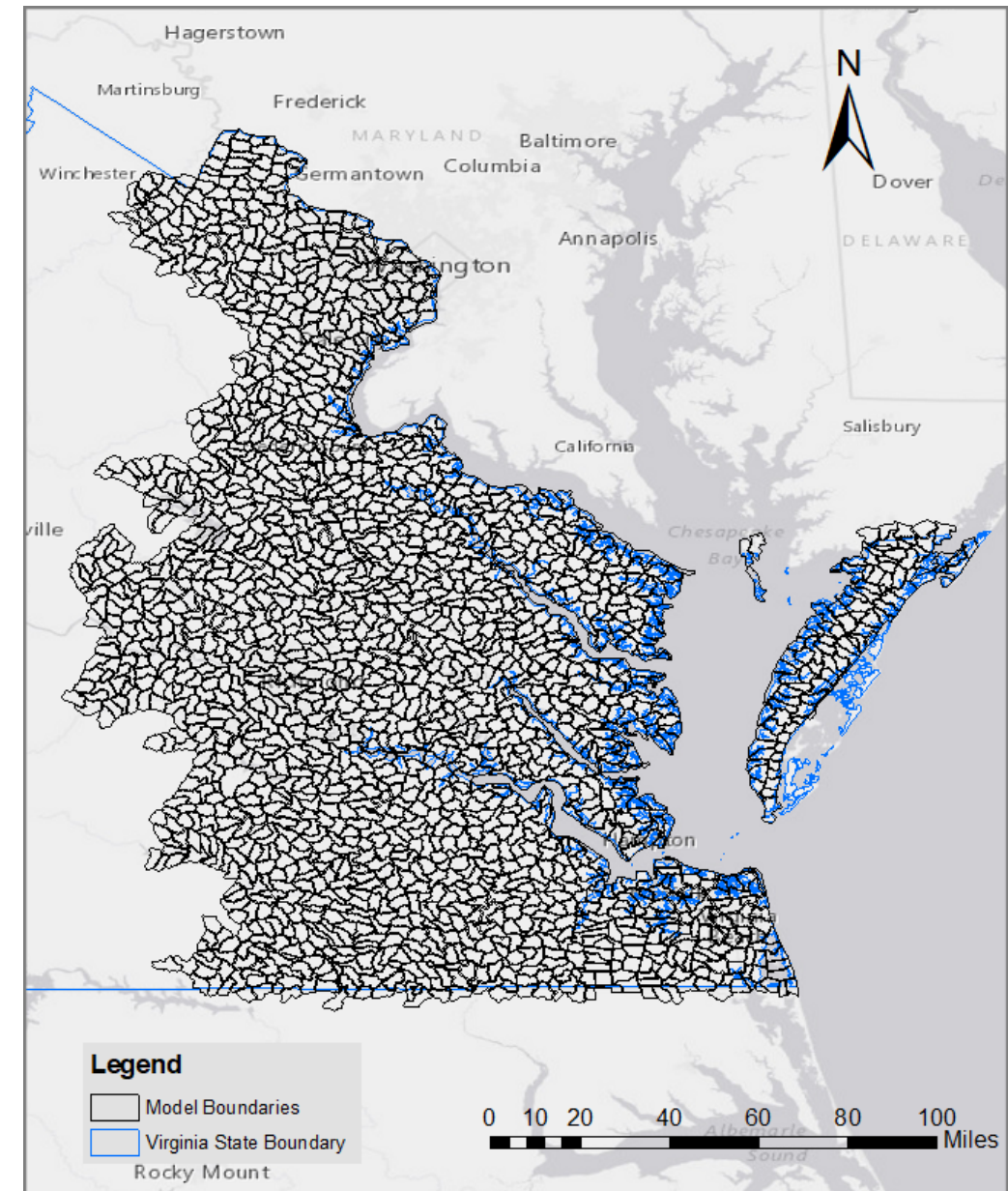
Combined Flood Hazard Data for Planning

Comments + Questions

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Subcommittee Recommendations

Recommendation Process Overview

Summary of Efforts to Date

Facilitated Discussion

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Subcommittee Recommendations

Purpose: Identify opportunities to improve mitigation of severe and repetitive flooding in the coastal region. This may include:

- Actions to implement prior to the next planning phase. (Next 1-4 years)
- Planning process improvements.

Audience: State government, PDCs, local governments, and/or others.

- Recommendations for implementation actions will identify the intended audience in general terms (ex., state agencies).

Aiming for 3-5 recommendations per subcommittee.

Presentation: A section of the final plan document, presented as recommendations of the public body.

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Recommendations Development

- Collaborative process
  - Launch team will facilitate discussions.

- Informed by:
  - Prior TAC discussions
  - Phase I plan
  - Stakeholder engagement
  - TAC member surveys

- Final recommendations will be voted on by subcommittee members, followed by full TAC.
  - Subcommittees will report out status updates at Q2 and Q3 Full TAC meetings.

Q2 2024 Subcommittee Brainstorm and Prioritize Draft Recommendations

Q3 2024 Subcommittee Review and Revise Recommendations

Q4 2024 Subcommittee Finalize and Vote on Recommendations

Q4 2024 Full TAC Vote on Subcommittee Recommendations

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Subcommittee Recommendations

The Subcommittee previously provided input on the following:

Research
- Natural and Nature Based Functionality

Data
- Land Cover Data
- LiDAR Data

Innovation
- Coastal Resilience Products and Materials

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Subcommittee Recommendations

CRMP Phase I identified the following technical process improvement needs:

Research

- Expanding Tribal Engagement and Understanding of Cultural Resources
- Identifying and Developing Projects for Impact Hotspots

Data

- Standardized Data (Parcel, FFE, Demo, Critical Infrastructure)
- Flood Hazards (Rain, Riverine, Erosion, Groundwater, Compound)
- Impacts (Sensitivity, Adaptive Capacity, Economic)
- Resilience Actions (Project Benefit Areas)

Innovation

- Financial Tools and Processes

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Subcommittee Recommendations Facilitated Discussion

Recommendation Development

Today's Activities:

a) Review and refine draft themes as a group

b) Individually brainstorm recommendations under each theme

c) Breakout room discussions of recommendations

d) Discuss recommendations as a group

e) Prepare to vote on top recommendations before next quarterly meeting

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Recommendation Topics

RDI recommendations should primarily focus on topics related to:

1. Data development plan to fill gaps in advance of future planning processes.

2. Innovations suited to address flood risks and fill gaps in resilience action for future planning efforts. Consider R&D, public-private partnerships, collaborative research.

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Draft Recommendation Themes

1. Research

2. Data

3. Innovation

Others?

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Draft Recommendation Themes

1. Research

Theme Description: Applying research to CRMP flood resilience planning and processes.

Questions to Consider:

- What new flood resilience research has been published that can be applied in future CRMP phases?

- How can research be applied to project-scale metrics and monitoring techniques?

Example Recommendation: Support research to evaluate flood reduction metrics of natural and nature-based solutions.

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Draft Recommendation Themes

2. Data

Theme Description: Sourcing, utilizing, and programmatic management of high-quality data to improve models, risk assessment, and planning approaches.

Questions to Consider: Where does the CRMP require more comprehensive and/or updated data?

Example Recommendation: Develop a data development plan to fill gaps in advance of future planning processes.

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Draft Recommendation Themes

3. Innovation

Theme Description: Advise on innovations suitable to address flood risks and fill gaps in resilience action.

Questions to Consider:

- How can CRMP integrate R&D, public-private partnerships, and/or collaborative research?

- Where do flood resilience gaps exist that provide an opportunity for innovative solutions?

Example Recommendation: Integrate innovative resilience and solutions into planning and regulatory programs.

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Draft Recommendation Themes

Others?

What other themes, questions, and types of recommendations should we consider for RDI?

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Draft Recommendation Themes

1. Research

2. Data

3. Innovation

Others?

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Recommendation Tips

- Begin each recommendation with a verb

- Recommendations apply prior to next planning phase (next 1 – 4 years)

- Recommendations apply to planning process improvements

- Use general terms for implementation actions (ex: "state agencies" vs. "VDEM")

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Breakout Room Discussions

- After arriving in a breakout room, type your recommendations in the chat

- Choose a spokesperson to report back to full group

- Facilitator guides discussion of recommendations

- Return to main room for full group discussion

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Full Group Discussion

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Choose Top Recommendations

Vote before the next subcommittee meeting via a survey, to be emailed in coming weeks

Comments + Questions

Public Comment

If you would like to provide public comment, please let us know using the Chat window.

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New Business

Subcommittee Members Discussion

Action Items, Scheduling

- Action Item Review
- 2024Q3 Meeting (In Person/Hybrid)
  - CRMP PII – Flood Hazard Assessment Review
  - Future Plans - Recommendations

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