Meeting the Challenge of Change….*A Report from the Gilbert F. White Flood Policy Forum*

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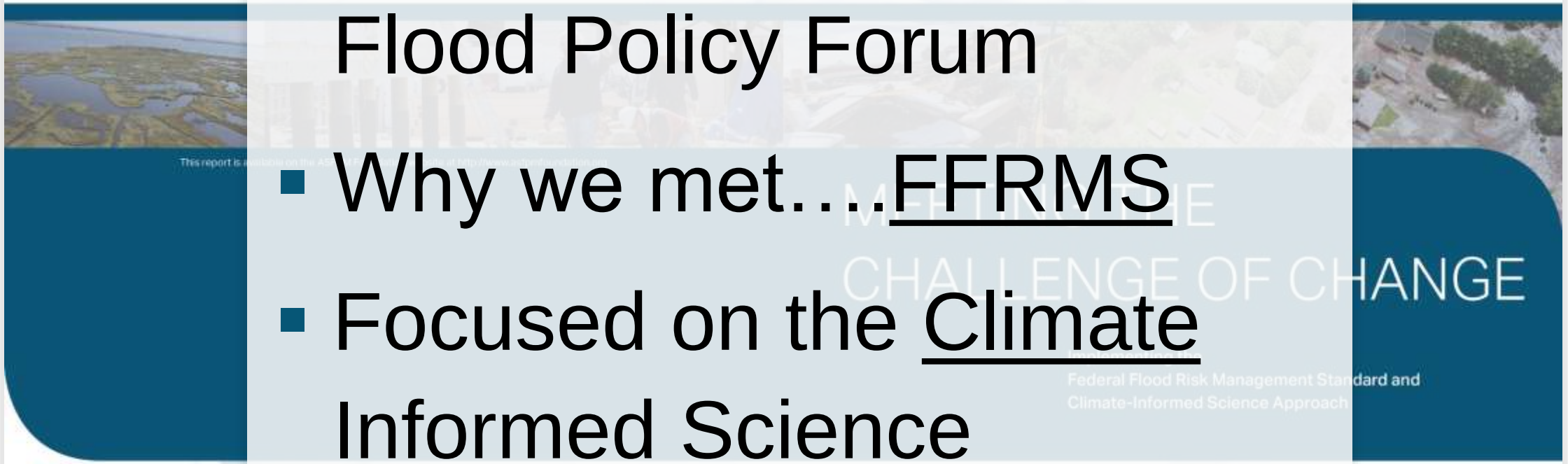
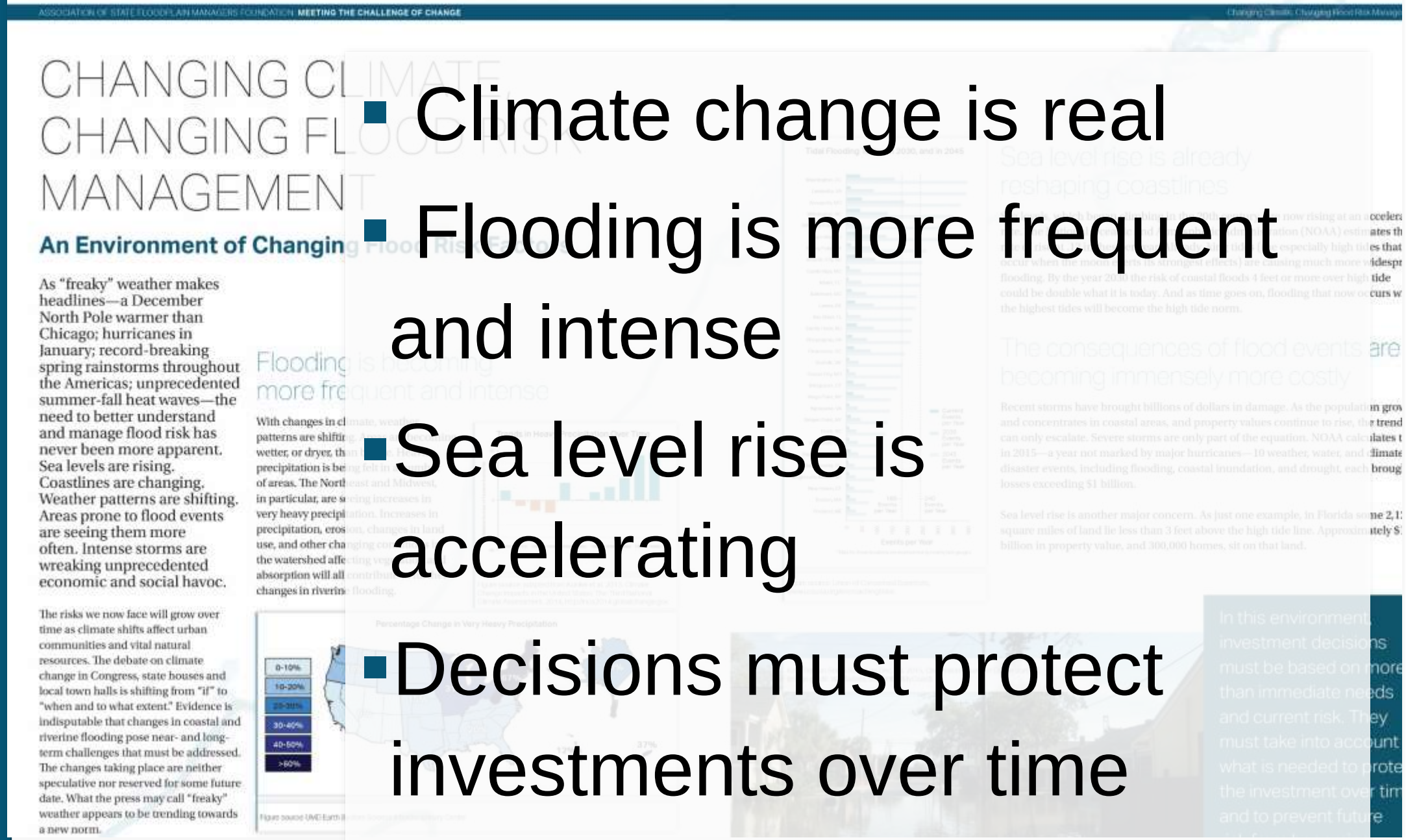
- Results from September, 2015 Gilbert F. White Flood Policy Forum
- Why we met….FFRMS
- Focused on the Climate Informed Science Approach (CISA)

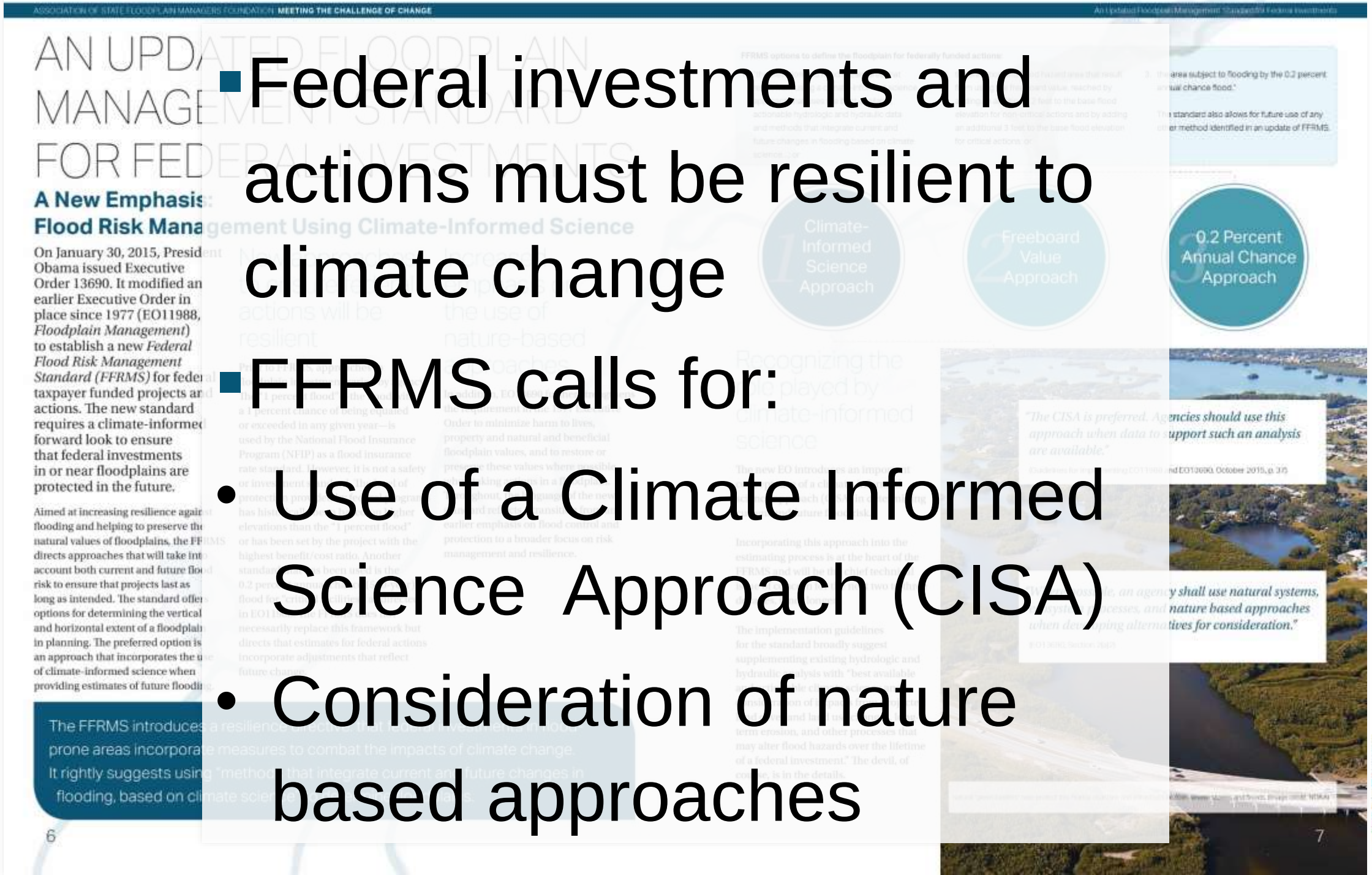




- Climate change is real
- Flooding is more frequent and intense
- Sea level rise is accelerating
- Decisions must protect investments over time

- Changing Flooding Conditions
- Stationarity assumption no longer works
- Resilience is more than building stronger

- Federal investments and actions must be resilient to climate change
- FFRMS calls for:
  - Use of a Climate Informed Science Approach (CISA)
  - Consideration of nature based approaches



- Federal Agency Impact
- Examples of program issues
  - *What is emergency?*
  - *How to apply BC analysis to future change?*
  - *CISA in Riverine systems*

- Fed-State cooperation & collaboration a must
- Challenge: Implementation by multiple agencies
- Need Unified National Program and Fed Leads

- We can prepare CISA estimates….*right now*
- Estimates will improve with time, data and reevaluation
- Freeboard is method of last resort
- We must embrace uncertainty analysis

ASSOCIATION OF STATE FLOODPLAIN MANAGERS FOUNDATION: MEETING THE CHALLENGE OF CHANGE

INVESTING FOR THE FUTURE

Incorporating Climate-Informed Science

Uncertainty is a given. Tomorrow's climate and built environment will be different from today's, and in many places the changes will be significant, requiring changes in how we manage flood risk.

Hydrologists and engineers will need to provide flood estimates with an incomplete understanding of the location, timing, and extent of impact, particularly in the riverine environment. The good news, however, is that professional floodplain managers have provided reasonable estimates in the past with less than certain data and knowledge, and we can do it again.

"One size fits all" estimates of future hydrology will *not* fit all

The FFRMS suggests, as alternatives to CISA in making estimates of future hydrology, a 2-foot freeboard, 3-foot freeboard for critical actions, or the 500-year flood in making estimates of future hydrology. Use of one-size-fits-all freeboard or the use of a one-size-fits-all safety factor, while simple in application, does not adequately address variation of uncertainty over time or from site to site. Use of the 500-year flood poses further concerns if used in coastal areas because maps apply it as a stillwater boundary estimate, not taking into account the effects of future sea level rise or flooding due to wave action.

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Success in using CISA is dependent on several factors. Moving forward, we need data, we need information, and we need to keep improving both. The need for data collection and monitoring of the nation's streams and watersheds has never been more crucial.

We also need policy and consensus regarding tolerable levels of risk and uncertainty. And we need to re-evaluate where we are, periodically, over time.

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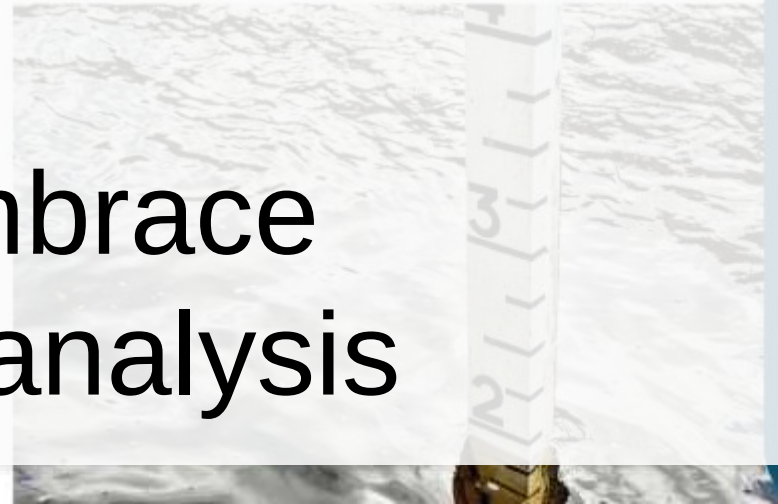
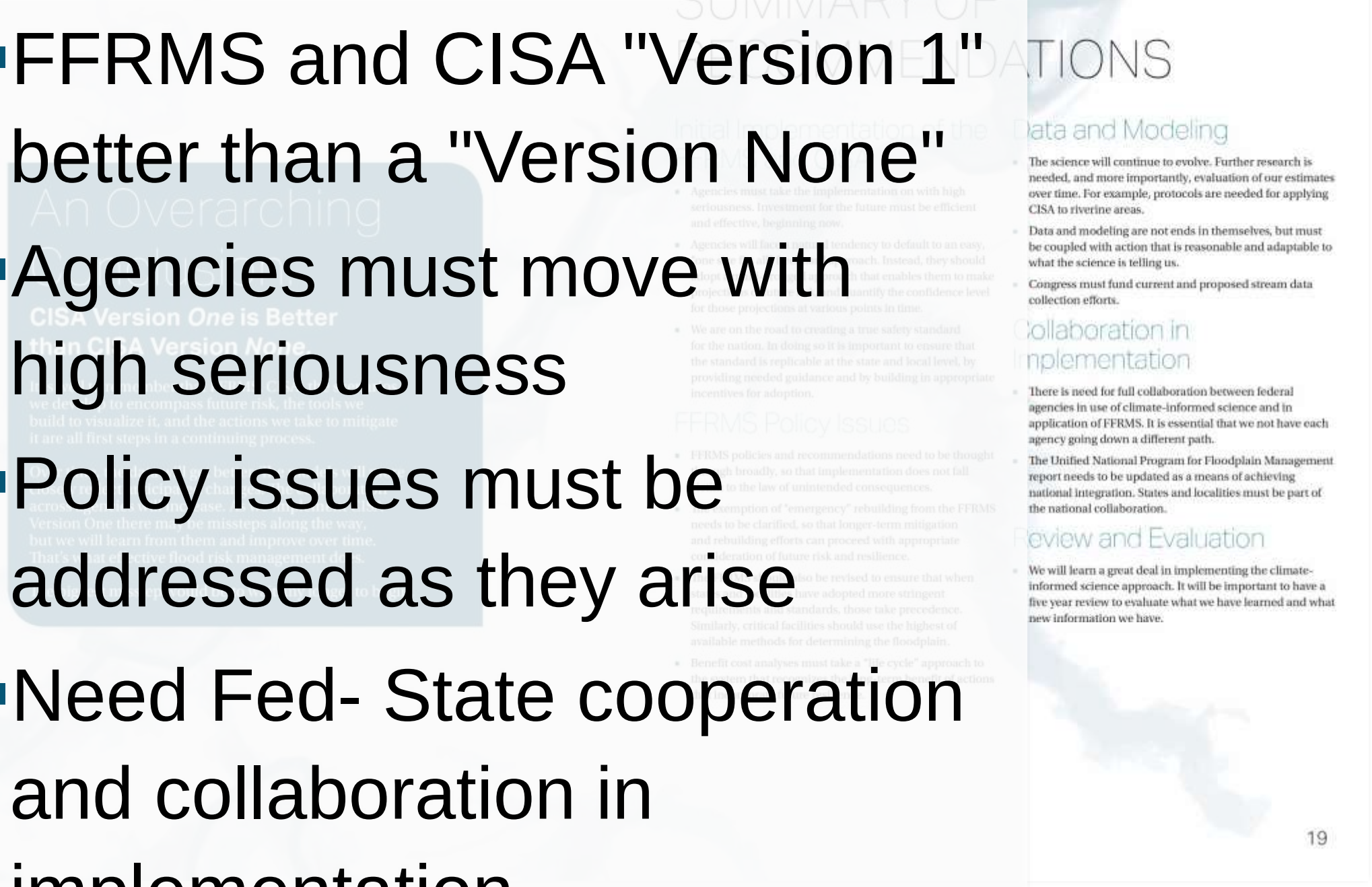


- Must effectively communicate risk
- Regulatory products alone won't do
- Need to exploit future-facing communication tools

- Current Investments will be impacted by a changed climate
- The dialog on how we adapt can no longer be delayed
- *"We have enough information to act, so let's act" Gilbert F. White*

- FFRMS and CISA "Version 1" better than a "Version None"
- Agencies must move with high seriousness
- Policy issues must be addressed as they arise
- Need Fed- State cooperation and collaboration in implementation



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Thank You