

Summary of Chapter 1 Workshop

PURPOSE OF CHAPTER 1

Summary:

Cara gave an overview of the first chapter of the RRAP and the purpose of this chapter. The first chapter is tasked with clarifying relevant terminology, establish the risk-based framework for how to consider climate change, summarize the relevant climate change trends and projections, and to set goals related to improving how we track climate change indicators, and encourage regional consistency in data use and communication. Chapter 1 will include brief summaries of observed trends and modelled projections related to climate change, an overview of how risk will be considered in chapters 3, 4 and 5, and will reference outside documents such as the National Climate Assessment.

HAZARDS STRESSORS AND DRIVERS

Summary:

Identification the key climate stressors, non-climate stressors and climate drivers and their impact on identified hazards and clarification of key climate change terminology.

Presenters defined key terminology which included

- Climate stressors
- Non-climate stressors
- Impacts
- Drivers
- Observations
- Projections

Comments:

There was a question about whether the chapter would consider a future without action? The TBRPC document “The Cost of Doing Nothing” considers a future without action. Additionally, the signing of the TBRRC MOU committed the members and partners to action.

Libby Carnahan clarified that the projections focus on IPCC RPC 8.5, business as usual, unless we see major changes in global climate change mitigation. Maya Burke added that that level of climate change mitigation would require additional adaptation actions, and the political will to support these actions.

REGIONAL TREND AND PROJECTION DATA

Summary:

Presenters identified recommendations for XX to be included in the RRAP. The list of recommended **hazards** included flood, tropical cyclone, severe storm, drought, extreme heat, geological (sinkholes), algal blooms and biological incidents. The list of **non-climate stressors**

included land use change, population growth, socioeconomic vulnerability, nutrient pollution, and land development. The list of recommended **climate stressors** included increased air temperature, increased water temperature, sea level rise, extreme rainfall and ocean acidification. The list of proposed **climate indicators** included mean sea level, annual average air temperature, annual average water temperature, bay/gulf pH, and annual average precipitation. The recommended list of **driver indicators** included, GHG emissions, land use/land use cover change, population change, and public opinion on climate change. The proposed list of **impact indicators** included high tide flooding, vector-borne illness, habitat migration, heat-related illness, harmful algal bloom (HAB) duration/severity and change in growing season length.

Comments:

Participants would like to see addition of the following:

- Transportation
 - Increased transportation as a driver of increased emissions
 - Transportation could potentially fit within land use and land use development categories.
 - Compact development that reduces automobile dependence can have a positive impact on emissions.
 - Daily Vehicle Miles Traveled is tracked by FDOT and MPO
 - Commuter levels
 - ICMA Impacts of Electrical Scooters
 - FDOT road counts
- Policy as a non-climate stressor
- Energy/utility sector as a stressor
- Crystal River Nuclear Station
- Extreme vs increased rainfall
- Air Quality
 - Air quality Monitors: tracking air quality improvements
 - CO2 Keeling curve data <https://sioweb.ucsd.edu/programs/keelingcurve/>
- Probabilistic Coastal data (Pinellas and Boca Ciega Bay)
- Tropical Storms/Hurricane
 - Intensity and Increased Frequency
 - Larger slow moving heavy rain producing storms increase flood risk coastal and inland
 - Wind strength
- Precipitation
 - Rain rate vs annual average precipitation
 - SWFWMD radar rainfall data source for rainfall well groundwater in their hydrological section for immediate local data
 - TB Water rainfall and hydrological information
 - Predicted precipitation
- Streamflow (USGS)
- Sea Level Rise

- Probabilistic sea level rise
- Building Energy Use
- Climate Gentrification Impact
- Population Change
 - Shifts in density
- Development
 - Rooftop and/or parking lot studies.
 - Pervious/Impervious
 - Housing risk <https://www.enterprisecommunity.org/solutions-and-innovation/disaster-recovery-and-rebuilding/portfolio-protect>
- Socioeconomic
 - BRACE (building resilience to climate effects)
<http://www.floridahealth.gov/environmental-health/climate-and-health/brace/index.html>
- Agricultura and Food Systems
 - Crop failures
 - Change in food production
 - Local food production consequences (Ph)
- Flood
 - Flooding over time
 - NASA High Tide Flooding
 - NASA flooding tool
 - How High tide flooding is observed tracked and reported across the region
 - How much high tide flooding have we had in the region
- Subsidence
- Health
 - Increase likelihood of another pandemic
 - Hospitalizations due to Respiratory illness
<http://www.flhealthcharts.com/charts/OtherIndicators/NonVitalIndDataViewer.aspx?cid=0338>
 - Mental Health Impacts
 - Aedis Egypti Mosquito
 - NOAA forecasts Vibrio (“flesh eating bacteria”)
 - Uptake of pests and vectors
 - Heat related mental health such as stress and violence
- Saltwater Freshwater Interface SWFWMD- Salinity, flow, rainwater inputs, trends, consumptive use

BREAKOUT DISCUSSION OF GOALS/OBJECTIVES/ACTIONS AND SCORECARD

Summary:

Discussion to gain consensus on chapter goals and objectives. Begin to discuss chapter actions.

Comments:

Participants wanted to see the following principles included in the chapter and incorporated into the chapter goals:

- Data Standards
 - One Data Source could serve the needs of multiple indicators
 - Federal standards for data to encourage federal funding
 - <https://www.go-fair.org/fair-principles/>
 - data accessibility in a common website -- TBRPC, data repository, open data
 - best practices for data standards, time, need additional conversations about using data
 - if we don't have data, let's get it and figure out unified approach
 - Engage local groups working on data to help define RAMP, GIS and
 - TBEP Open Science Subcommittee
 - Define all of the local entities working on data science and applications to
 - What about discussion of other goals that need to be added?
- Measuring Success
 - Scorecard = what does success look like? How will we all know if we have been successful with specific goals local or regions.
 - Scorecards should be success driven
- Need guidance on how to use the data
- Process and buy-in for the RRAP and goals
- Other considerations
 - Add Living Shorelines incentives development
 - Need food security goal/objectives/actions.
 - Coalition should collect RFPs related to resiliency initiative by various local governments
- Goals for need to add scientific and technical staff capacity
 - Administrative capacity evaluation by TBRPC

Goals

- Goal 1: Improve the collection and monitoring of climate indicator data to be used in local implementation through collaborations with local and national scientists.
 - Improve the collection and monitoring of climate indicator data through collaborations with local and national scientists, to be used in local implementation.
 - Add accessibility to collection and monitoring
 - who is doing the work?...the RPC? If local govts need to do it then we need direction. ...but this is more action-related.
 - It could be a goal of the resiliency coalition to make this data accessible; point people to this data
 - Collection isn't as important as accessibility; TBRPC currently doesn't improve this access
 - Language should be simplified; local national scientists = use the CSAP (with expanded expertise)-- better communicate the appropriate role of the CSAP
 - Not clear. Use the best available data (local/regional/national)
 - Use best local/regional/national climate indicator data

- Libby (might be confusing goals and actions) doesn't like "improve" as the ONLY verb in this goal - We need to Build a Network of Data Experts from the region who talk to each other, identify what is out there, and have a central portal for storing and retrieving data.
- Yes: improved local partnerships, new technologies,
- "climate indicator and impact data"
- Gary- How about change "encourage" to 'provide"? - We are supposed to build the network
- Not if we are just encouraging use; decision-support of what?
- "Support/provide/drive/apply regional consistency"; decision-support of hazard mitigation and adaption strategies"
- data already collected, so we should be using to monitor?
- Alternative terms: Use and management
- Difference between collection and monitoring? Should we include "management" or "stewardship" in place of one of those words?
- Increase use of data on climate indicators among regional and local govts (performance measure for this?)
- May want to specify what "collaborations" means to allow better objectives
- Rewrite. We are not asking locals or the region to "collect" data. We want the coalition to inventory, interpret and distribute data for local and regional use.
- Goal 2: Encourage regional consistency in the use of climate change data and risk communication to ensure consistent decision-support.
 - Potential change to goal: Encourage consistency in the use of regionally-appropriate climate change data in risk communication and decision support.
 - It's important to provide the guidance as to how to use the data, in advance of local governments decision making, so that they are all using it consistently from the get-go
 - but the best use of the data needs to be explained so that jurisdictions know how to use the data, and ultimately use it consistently. Review new proposed policies and compare with surrounding proposals.
 - Benchmark against state, national or global standards
 - Establish data collection framework for region through standardized best management practices
 - Word salad; Data should be consistent with Open Science principles; Encourage is too weak; Should feed into a state-wide climate plan (legislative advocacy); MOU establishes this as a priority already; Consider using CSAP to collate/curate data for easy, consistent dissemination and use throughout the region
 - Regional consistency is Vague
- Additional Goal: Ensure effective and broad communication of information and data.
- Strengthen coordination and collaboration in Tampa Bay Region on climate change issues by building the capacity of the Tampa Bay Resiliency Coalition to meet evolving regional needs.
- Goal 3: Encourage regional approach to risk communication
- Strengthen resilient local and regional economy
- Strengthen eco-systems
- Strengthen Food Security

Objectives

- Data Coordination
 - We want the coalition to inventory, interpret and distribute data for local and regional use.
 - define significance and interpretation of indicators for local govt planning - what decisions might the data support? (performance measure: development of white paper, etc)

- Annually review new climate reports and data and inventory and make available to the region
- At certain recurrent time intervals, review the indicators to evaluate if improvement and whether others are needed.
- The Climate Science Advisory Panel (CSAP) will track regularly and report on regional indicators of climate change impacts, emission reduction, and adaptation action.
- Data Sharing & Collaboration
 - Ensure effective and broad communication of information and data.
 - Increase accessibility of data: It would great if there was a way for the RPC to make appropriate data accessible (i.e. provide links on the RPC website to the data we should be using) - data repository
 - more localized collaboration and synergies of monitoring programs
 - Making sure information is easily accessible and readily available
 - Ensure the information is accessible broadly to stakeholders and groups of varying abilities. (ADA)
 - Identify programs and stakeholders that would benefit from data and report inventories.
- Best Practices
 - Local governments develop regionally-consistent policy that is informed by data; regional guidance
 - Identify which uses can/should be regional and which approaches should be tuned for local government or entity.
 - Define where local governments should integrate and use climate indicator plan
 - develop information on relative risk for indicators
 - Have local comprehensive/strategic plans reflect climate indicator and impact data
 - Balance competing interests of society between natural resources and growth
 - Hold workshops to facilitate local use of data and reports in a consistent manner.
 - Better long term planning among population growth
 - Eco-system services
 - Enhance food security and local/regional food production and preservation/protection of agricultural lands
- Communication
 - How to communicate common quantitative metrics

Actions

The following were listed as important actions to include in the Regional Resilience Action Plan:

- Data Sharing & Communication
 - Create a regional database of sources, links, and description of how to use
 - Incorporate RAMP for information sharing
 - Improve collaboration between Coalition members and stakeholders to share data -- many have data but not well communicated, perceptions of risks, culture, economic factors (competitive interests), lack of trust
 - Annual release of data analysis
- Best practices
 - Create best practices for use of data to ensure consistency in use of data by local governments in advance of their decision-making/policymaking
 - establish guidance on risks communications and where and when and for what audience
 - Revise RRC MOU to outline opportunities and roles (create accountability) - create some additional vehicle of process, structure, buy-in

- Indicator data sources should be long term and adhere to FAIR principles, local governments only have the capacity/funding for so much
- Evaluate capital improvement programs
- Develop Adaptation Action Plans
- Regional Community Food Assessment Study
- Identify Infrastructure Trigger Points (water, wastewater, lift stations, outfalls, impoundments, transportation, etc.)/ Develop hardening plans & priorities
- Living Shoreline Plan development & incentives (living shorelines vs. hardened infrastructure)
- Communication techniques with property owners to encourage living shorelines (tax rebates)
- Partnerships
 - Establish a region-wide data working group to identify standards, set criteria, best practices in visualization and accessibility.
 - Convene the CSAP at least every five years to review and update the recommended projections of sea-level rise for the Tampa Bay region. Source: [CSAP](#)
 - Partner with, engage and encourage local universities and organizations to improve monitoring
 - Partner with local organizations to provide training and facilitated discussions with local governments as to how to implement and use the data
 - Pull in private sector
 - Convene coordination and collaboration with local and regional financial sectors and business community
 - Other data sources from local partners to include monitoring data in Gulf of Mexico, ICW
- Advocacy & Funding
 - advocate for consistent regulatory requirements at the state level to try to achieve consistency at local level
 - go after grants to fund new data collection methods
- Data management
 - Identify the data associated with each indicator and what spatial, temporal information is available
 - Include diverse audiences in the process of defining data and collecting community knowledge related to specific indicators -- link to Chapter 3 People?
 - Gap analysis of local/state/federal data sources (funding, implementation, consistency)
 - Create a regional climate assessment
 - create localized climate analysis and decision-support tool
 - Regular reporting on Climate Indicators
 - Data sources/repository - data sharing repository for more accessible data
 - Identify data gaps; revisit inventory
 - Track changes in data

Scorecard

Participants discussed the need for the following in the scorecard:

- General
 - Third party review/scoring such as by FDEP or a university partner.
 - The scorecard can be used so that Local govts know what other local governments are doing and to compare across the region
 - Scorecard should use a grading system, but instead should measure levels of success.
 - Scorecards should be an "at-a-glance" communication tool.
 - Important to identify who will complete the scorecard
 - The scorecard should measure how individual actions contribute to shared visions.
 - Scorecard should acknowledge existing requirements such as peril of flood vulnerability assessments

- For Chapter 1
 - Presence or absence of certain data in a plan should be priority
 - More important for the subject matter of other chapters to have more detailed scorecards