

# Considering Climate in Decision Support for Resilient Coastal Communities

Hosted by The Southeast and Caribbean Climate Community of Practice

**June 12-14, 2012 -- Jacksonville, FL**

Objectives for this meeting:

- Share the latest climate science (past data and future projections) and resources for the region
- Share local community requirements and processes for development of hazard mitigation and other plans (e.g., comprehensive plans, emergency operations plans, post disaster redevelopment plans) where climate should be considered
- Identify needs of local communities in incorporating climate considerations into existing planning efforts
- Introduce existing risk and vulnerability assessment processes and tools, how they have been implemented in local communities, and how they might be tailored to apply to the region
- Share information on the climate work of the Community of Practice members and stakeholders
- Discuss how Community of Practice members may be able to help address identified needs, and consider the long-term goals of the Community of Practice

## **Strategies and Needs for Incorporating Climate into Local Planning Processes (Common Themes from Break Out Group Report Outs)**

- Groups discussed three pieces related to strategies:
  - *Where* insert climate? There are multiple existing plans where climate is relevant (e.g. hazard mitigation, comprehensive, transportation, sustainability, water, and CRS plans.)
  - *How* insert climate? What's a good approach? When? There may be "tipping points" when there are opportunities to make progress.
  - *Who* needs to be involved? Not just the "believers." Need to connect different groups. May be some important players we're not used to working with (e.g. insurance sector.) Forming stakeholder/citizen groups can be useful.
- Common needs mentioned several times:
  - Making the case!
  - Connectors – of people/professions, of concepts, and of plans. Sometimes connectors have to do conflict resolution...
  - Understanding and addressing legal issues
  - Partner up! Effective for communities to band together for moral and actual support / leverage.
  - Social science. Risk communication based on understanding of people. (Helps make the case.)
  - Economics, including the cost of no action. (This also helps make the case.)
  - Model language.
  - Common understanding of timeline for different sorts of planning.
  - Visualizations (Again, helps make the case.)

## **Assisting Local Communities in Incorporating Climate Considerations into Planning (Common Themes from Breakout Group Report Out)**

- Attendees are already doing a lot!
  - Doing a ton, seizing opportunities...but some is stealth and with “friendlies.”
  - Build on existing coordination mechanisms (and education/outreach and training mechanisms)
  - Some innovative use of social media (peer pressure potential!)
  - Could do more incentive-based education (attendees earn professional credits)
  - Partner with existing funding streams and programs (e.g. Landscape Conservation Cooperatives, King Tides program to take pictures of high tide events to show what SLR will look like)
  - Already seizing opportunities! From formal (designate ‘adaptation action areas’ in FL) to considering climate change when look at existing codes, water management, etc.
  - Using existing info/tools, but still need to raise awareness about availability
  - A lot internal discussion [e.g. at the local government staff level] because that’s safe
- What else is needed?
  - More and clear articulation of local government needs.
  - Outside facilitators to help communities have the discussions and apply the tools.
  - Unified message across states with common -- and defined – terms.
  - Communication training – communication/messages for the public and for the not-so-friendlies
  - Engage more sectors, industries (e.g. tourism, insurance, fishing, media, lawyers.)
  - Cost-benefit analysis of doing adaptation planning, and costs of doing nothing
  - Plan for most vulnerable (“climate refugees.”)
  - Political will and champions!
  - Train to use tools – Next CoP meeting topic – “Stop making new tools / tweaking them...Just teach us how to use them!”
- Partners to invite to join the CoP / to work with:
  - Coastal States Organization
  - Association of Climate Change Officers
  - Landscape Conservation Cooperatives
  - Insurance agencies
  - Lawyers
  - National Association of Counties – partner to bring in local officials

#### **Next Steps for the CoP (in priority order, taken from flip charts)**

- Message training – have to be understandable and persuasive (21)
- Cost-benefit analysis training (20)
- Quantify legal and financial implications of no action (16)
- Work with National Association of Counties (NACo) to do workshop (or series) for elected officials and city managers similar to their League of Cities effort (15)
- Unified language; message branding (12)
- Training/outreach to emergency management community re: importance of longer-term hazards/issues (state hazard mitigation officer and national association of emergency managers (NEMA) (9)
- Better understanding of the science – more science presentations (9)
- State-specific summaries of legal issues re: development in hazardous areas and infrastructure (case law) (6)
- Follow up with communities using the tools [we saw presented during our meeting] – see what else they need (5)
- Coordinate more with professional organizations (5)

- Take advantage of opportunities to have discussions with communities – can use tools heard about as starting point (use local issues as starting point) (4)
- Form group on StormSmart Connect for Southeast and Caribbean Community of Practice (include inventory of subject matter experts) (2)
- State level meetings like this one (2)
- Clearinghouse of plans and case studies and pictures and tools (e.g. Georgetown Climate Center, CAKE, Coastal Climate Adaptation) (1)
- Search for local resources for good facilitation of the process and use visualizations (1)
- National members need to encourage our organizations to address these issues specifically re: insurance and development – discuss at national level (1)
- Council of state governments – partner with them (interested in developing legislation)
- Extension Disaster Education Network (EDEN) – partner, use information – ask if interested in developing a focus on climate (Jack Thigpen volunteered)
- Research resources Association of State Floodplain Managers (ASFPM) - legal

### **Priorities of the CoP (not in order, grouped by category, from sticky note exercise)**

#### **Partnerships**

- Expand CoP – NASA, Nat'l Park Service, Meteorologists, elected officials, county/municipal planners
- Include Caribbean in all training and outreach
- Community level conversations – insurance industry reps; real estate/building industry reps; professional organizations – planners, engineers; city/town governments, not just counties
- Look for upstream partnerships, especially for drought related issues
- Work with APA to collect model ordinances that address concerns
- Identify ways to work with private sector partnerships on evaluating vulnerability to climate, and working with them to communicate concerns to property owners
- Determine political will for addressing climate-changes impacts among local/state leadership of participating orgs/entities (sea grant, Coop Extension, various NOAA agencies, emergency managers, floodplain managers)

#### **Best Practices**

- One spot for sharing stories, pictures, successes/failures (maybe StormSmart?)
- Example of 'good-better-best' ways other communities are addressing climate
- ID successful practices
- Summaries of SE and Gulf case studies of community actions to address climate issues
- Showcase successes and replicate
- Coordinate research and pilot projects, including evaluation, to speed development of best practices

#### **Interaction between Meetings**

- Online mechanism to share success stories, funding opportunities, needs/help, science updates
  - [Group on Storm Smart Connect](#)
  - Facebook page –private for group materials or public to direct others to it
  - [Email list](#) (alias?) – Quarterly email newsletter
  - [Listserve](#) – or other mechanism, separate from stormsmart – include a 'feature' or blog post from a community member each month about a project they are working on

- [Web site](#) – or clearinghouse – share progress/obstacles, news articles, presentations, websites, case studies, models, tools, etc – w/functionality for posting comments from registered users – could be a blog-type page w/ a ‘toolkit’ section
- dropbox or ftp site – to distribute documents and ideas to group
- Assist members with outreach – marketing, behavior change, social media strategies
- Develop opportunities e.g. webinars, bulletin board, committees
- Semi-annual webinars hosted by volunteers on rotating basis

### **Funding**

- [Pursue funding](#) for the community of practice to continue efforts
  - Do it collaboratively
  - Grants could cover all states and territories or complementary topics, etc.
  - Create a business model

### **Messaging**

- [Establish consistent message, branding the message for climate change](#)
  - Engage professional PR or media specialist to craft message
  - Develop a single set of discussion (factsheets) messages
  - An official logo
- [Fact Sheets](#) using best available regional science including consistent message
  - By state with reference to CoP webpage with more detailed research
  - Include talking points of the science to respond to common questions in a non-confrontational manner
  - Uniform science message
  - Include videos and graphics (also in Spanish)
  - Share with key managers. Provide it in an easy to navigate format and for public distribution
- Establish work group on messaging
- Develop training on consistent messages – ‘words that work’, dealing with disruptive people, ‘Compass’ workshop, read ‘Escape from the Ivory Tower’
- Work with youth groups (4H, FFA) to help disseminate the message on climate change issues
- Submit article to APA monthly magazine about both CoPs and also success stories in region

### **Tools/Training**

- [Training/capacity building to use tools at local level](#)
  - Tool [indcipherable] w/comment fields on pros/cons/it’s use
  - More county/regional workshops would be good
- Training for planners to understand the need for future land use/comp plans
- Collaborate to develop regional trainings on needed topics i.e. cost/benefit analysis, messaging

### **Future meetings/CoP Capacity Building**

- [Continue meetings](#)
  - [Conduct them annually](#)
  - Annual meetings or webinars for key info/skills
  - Have training at meetings
  - Next year (2013) needs to be a CoP training meeting only – communications, cost and benefit, tool implementation – keeps momentum going
  - Ensure they continue through other organizations if NOAA funding is finite

- State level meetings in between 2 year CoP conferences
- Maintain focus on capacity building w/in CoP – trainings on messaging, cost/benefit, scientific info
- Draft SECEO CoP sustainability plan, including climate adaptation and mitigation
- Continue focus on local to regional planning but connect with other aspects such as science and state/fed policy and private sector (e.g. insurance)
- More presentations on the science
- More opportunities to get to know the other agencies in the room by mixing up the break out groups each time
- [Webinars /online training during intervals between meetings](#)
  - Webinars to train us to work in communities
  - Science webinars – regional, state-level – build our knowledge of what our neighbors are facing
  - [Include case study to highlight best practices](#)
  - Notify group of other webinars that may be of interest

### **Resources or Directory**

- Regional directory of who's who (fed, state, local, and regional = multi-state)
- Develop a list of experts and Speaker's Bureau
- List of resources (experts, speakers, \$, tools, counties taking action) local communities can access to advocate climate change action (mitigation, adaptation), target inactive counties to participate
- Develop model code language
- Compile economics resources and identify research needs for future studies

### **Working Groups**

- Establish for 2 or 3 top priority issues (message development and training, legal issues, etc.)
- Possible groups: climate change prevention/mitigation, climate change education and marketing, climate change policy and regulation, climate change mapping and GIS, economic resources, needs for future studies

### **NEXT STEPS FOR THE CoP (Large group discussion)**

Future CoP Meetings – every other year, states can meet in off years or every year, network in between

Webinars/Training – continued education, not take place of in person meetings, need topics – Berry Williams to deliver CRS webinar/ Keith Ingram to host, CSC/many NERRs may also be able to host

Tools- training on the tools

Messaging

Model language

Branding

Funding- try as a group to obtain funding, Jennifer Jurado volunteers to assist

Partnerships – engage multiple other sectors

Best Practices – Sharing stories, pictures, case studies

Virtual Communication – [Stormsmart Connect](#), Listserv, Website, Google group, Stormsmart Connect received more votes than listserve

Consider a website as well as Stormsmart Connect – have different utility, different audiences

Resources or Directories

Working Groups

Approx 1/3 of attendees could not come if travel assistance wasn't provided.

Cull input from post-it notes – share with group, take some ideas to the next step, refine ideas

Legal information through Sea Grant programs and by state – Thomas Ruppert volunteered to help  
Match priorities with funding sources  
Logic model to inform content of future meetings and to identify funding sources

## **Case Studies: Communities Considering Climate Change**

### Group Discussion/Panel of Case Study Presenters

- All agree CRS is something they and citizens watch (citizens know it when lose an insurance rate reduction!)
- Stakeholder engagement – from the beginning, takes time/resources but very useful, tie to individual's financial interest, focused on their property but start thinking about *community*
- Most useful tool for inspiring public participation and concern/belief re: SLR?
  - Map showing inundation. “Slap in the face.” For council meetings
  - Always bring a big map (paper) to capture personal experiences
  - Map *and* pictures of existing flooding, roads flooding now (super moon)
  - Inundation modeling/maps showing what scenarios could mean – parcel level maps
  - Maps – Digital Coast – CRS (\$) – Networking
  - Maps, but are careful how use maps – “don't want it to look like a condemnation of a particular neighborhood”
  - Presentations to management, show the wastewater treatment
  - Coastal No Adverse Impacts...use it! Shows the legal side. Coastal Hazards portal

### Allison Hardin, Planner, City of Myrtle Beach

- Have been working on hazard resilience a long time – Class 5 CRS community – 3' of freeboard since 1991, Retreat from the beach campaign, coastal protection overlay zone to control erosion, preserve and maintain a recreational beach, Hurricane Hugo (1989) enabled the local government to pursue resilience measures, Floyd (1999) 24" of rain in 24 hrs after wet summer
- Mentioned climate change / SLR in 2011 comp plan and 2010 hazard mitigation plan.
- Lesson learned / things that help:
  - Keep your Boards educated
  - Find and nurture citizen advocates
  - Focus on your decisions having 'no adverse impact' on neighboring properties
  - Evaluate the programs you *do* have
  - Be nice (bring cookies!) – “Nobody likes to be told they're stupid” , show engineers what you have and what you need
  - Tie good stuff to dollars (e.g. CRS)
  - Use Digital Coast tools / data / training. <http://www.csc.noaa.gov/digitalcoast/>

Paul Wolff, Councilman, City of Tybee Island, and Jason Evans, Environmental Sustainability Analyst, University of Georgia

- Beginning a 2-year adaptation planning process (using SeaGrant funding.) Chatham County, GA DNR participating too. Infrastructure will be focus of the project. Need to consider the design life of different types on infrastructure.
- Fact that already have visible issues (e.g. road to Tybee floods a few times per year) helps
- City gets to decide which scenarios will use. Had first meeting with city, more planned
- Will use VCAPS (Vulnerability and Consequences Adaptation Planning Scenarios) and COAST (a tool that looks at the cost of different adaptation measures)

Phil Prete, Senior Environmental Planner, City of Wilmington

- Hard to be proactive because of 1) uncertainty, 2) lack of guidance, and 3) 'institutional inertia' – what do we do and whose job is it?
- Pilot projects (FEMA, EPA) – Wilmington and New Bern, NC; assess risk to water and wastewater infrastructure, adaptation options and how can incorporate in plans, NC DEM iRisk model to generate damage prediction from surge and SLR, damage thresholds
- Have inundation scenarios (up to 1m of SLR by 2100, used RI and Miami as models – 3-5 ft rise for good planning, State senate says use historical rates
- Took approach to focus on infrastructure / aquifer – no private property issues, but help people understand their assets are at risk

Lillian Ramírez Durand, Coastal Community Development Specialist, Puerto Rico SeaGrant

- Demo project – 4 communities near Mayaguez, prepare/revise hazard mitigation plans w/SLR
- Impediments – lack of concern for climate change/SLR, evacuation routes run along the coast, highly vulnerable population (new evacuation road is a walking road but population is aging), 20% of folks in El Mani don't have property titles/deeds or insurance, no official/approved land use plan for PR, limited internet on W. Coast, recent earthquakes increased need for info
- Plans to restore coastal wetlands and salt flats, NRCS providing funds

Dr. Jennifer Jurado, Director, Broward County Natural Resources Planning and Management Division

- SE Florida Regional Climate Change Compact (4 coastal FL counties agree to work together
- Things that helped = 1) having outside, neutral facilitator, and 2) technical assistance from agencies (e.g. mapping.)
- Outcomes – Unified SLR projections (2030 = 3-7", 2060 = 9-24", used USACE guidance) and common methodology for vulnerability mapping, draft action plan December 2011, final in August, 'Adaptation action areas' in FL law (allows local govts to designate areas for adaptation planning), governance and authorities companion doc
- Broward County working on adaptation action area (i.e. getting it into the comp plan)
- There is a new 7-County effort (funded by HUD grant) to expand work

**State of Climate Science for the Southeast & Caribbean Region**

Dr. Chip Konrad, Director, Southeast Regional Climate Center

- No change in overall precipitation over the last 110 years, *but* looking at precipitation *extremes* there is a clear rising trend – Southeast region can expect increases in heavy precipitation events, models disagree about whether there might be more or less overall precipitation
- No clear drought trend
- Vulnerability can change even when there hasn't been a change in climate because of increases in population and development
- Southeast – one of few places globally with no increase in temperature over last 110 years, scientists not sure why, more aerosols in the atmosphere to limit warming could be one reason
- Atlantic hurricanes – lots of debate among scientists, models suggest fewer hurricanes but more *big* hurricanes
- “Scenarios are not forecasts – they’re possibilities.” Should think about scenarios as “envelopes of possibilities” – consider past extremes – worst case on one end, least worst case on the other end, could see any of these in the future or see something outside these
- SLR, 1-3' by 2100, uncertainty with ice caps

### **Existing Planning Processes**

#### Dr. Kathryn Frank, Department of Urban & Regional Planning, University of Florida (Land Use Planning)

- States may mandate comp planning at county/city level. May create regional planning entities
- “Comprehensive” plan means across jurisdiction/geography (city, county, state, regional/intra-state/multi-county) and across topics/sectors or based on individual systems/sectors (transport, natural areas, hazards, water supply).
- Community values and vision – climate (adaptation and mitigation) integrated or stand alone
- Implement policies and plans via development code (zoning, subdivision policies), capital improvement programs, conservation lands acquisition programs, etc.
- 20-year planning horizon is reasonable, with a 7-year update

#### Laura Herbert, Florida Division of Emergency Management (Hazard Mitigation Planning and Post-Disaster Redevelopment Planning)

- Process = 1) organize resources, 2) assess risks, 3) develop mitigation plan (i.e. identify projects), and 4) implement plan and monitor
- State Hazard Mitigation Plan (SHMP) is required by FEMA to be eligible for post-disaster funding, and has to be updated every 3 years.
- Local Mitigation Strategies (LMS) have to be updated every 5 years [again, FEMA requirement to be eligible for post-disaster funding]. Local governments are required to integrate with other plans (comp plan, transportation plan.)
- All-Hazard Mitigation Plans are required for a community to receive mitigation funding after a disaster. PDRPs are a great way to identify adaptation opportunities and place your community in a better position to receive pre-disaster mitigation funds- if they are provided in the future.
- SLR in local plans guide – [http://www.csc.noaa.gov/digitalcoast/\\_pdf/slscenarios.pdf](http://www.csc.noaa.gov/digitalcoast/_pdf/slscenarios.pdf)

#### Berry A Williams, Berry A Williams and Associates, Inc. (Community Rating System, Climate Updates)



- Central challenge is to market community resiliency and the benefits to the private sector
- CRS is an incentive-based program, community earns points for going above and beyond legal requirement, determines associated rate reduction on flood insurance (5-45%)
- New CRS manual expected January 2013, includes climate change/SLR/future conditions
- New point system will become effective with your community's next CRS review.
- There will be more credit for preserving open space, natural areas; special credit for protecting natural floodplain functions, emphasis on environmental consequences of development
- Can get all the details at [www.CRS2012.org](http://www.CRS2012.org).

**Group Discussion: Applying Existing Tools & Processes in the Southeast and Caribbean Region**  
(Notes taken on laptop during discussion)

Do you think the tools/processes presented could be useful for communities in the SE&C region?

- More information needed about tools
  - Follow-up training session to involve elected officials, staff, etc would be valuable
  - Why use one tool vs the other? How do we assess which tool is most useful for our community
  - Which tool/who should be involved? Think about the goal
  - Follow-up for tools: when to use them should be defined.
  - Matrix for tool selection
  - Checklist of resources needed for each tool (Maps, etc). Would help identify gaps
- After learning about the tool, What comes next?
  - Facilitators use templates/letters to invite communities
  - Invitation worksheet to figure out who should be there (Coastal Resilience Index)
  - May come via another effort
  - Cold calls: floodplain or emergency managers interested in getting all these people in the room
  - Letting communities know how the tool can help them, especially helpful is paired with funding
  - Roadmap: begin with "scoping" with CSC. Usually there is a driver/planning objective.
    - FEMA maps being updated in SC and other areas with enhanced products like SLR mapped. Communities can use this as an opportunity to open discussion
  - Quarterly webinars are available for intro info
  - Pilot the process with a university before going into the community
  - VCAPS stressors combined with a resilience index for each stressor
    - Tools can be used as building blocks. Start with CRI maybe then VCPAS for example
- Doing this without the experts? N. Myrtle used RI tool during comp planning with staff, FL used VCAPS for similar
- Public outreach for tools is crucial
- Case Study and Tool Results
  - Important to hear about transitioning to implementation – case studies – what happened after using the tool?
  - Survey of communities using tools? There are a few case studies on digital coast
  - Contacting facilitators who have used the tools
  - Additional climate into planning type case studies, not tool specific – Florida APA survey on communities incorporating climate into planning, Gulf adaptation inventory

Should the Community of Practice be using these tools with communities?

- From community perspective, heck yeah!
- Pairing technical assistance with the tools
- Conversation generated by the tool very important. Facilitator may be able to help identify ways to fill gaps for the communities
- Facilitators group to help identify answers: gulf example – have online/informal conversations
- Cost/benefit to communities. Allocating resources to tool development vs cost/benefit info
- Fostering leadership through tools – what else can we do?
  - Leadership academy on water resources/climate leadership academy for elected officials – they will be more likely to consider things like vulnerability indices, etc
- Share with NGOs who work at a different level
- Requires time/investment
- Who's not going to be happy in our communities?
  - Business in S. FL have been receptive
  - Talking about it often is important. Create opportunities to engage

### **Risk and Vulnerability Assessment Tools & Processes Being Used at the Local Level**

#### Roadmap to Adapting to Coastal Risk – David Betenbaugh, Coastal Hazards Specialist, NOAA Coastal Services Center

- Training with different levels of accompanying technical assistance (range from email to in-person– answer questions, provide guidance, suggest resources, help with a workshop)
- 3-hour web-based version offered quarterly and by request for specific groups
- Walks participants through the steps to assess risks: identify hazards, assess vulnerability of natural, built, and social environment, and identify strategies for risk reduction
- Examples – Ocean County, NJ need approved hazard mitigation plan, want to include climate change/SLR; New Fields, NH developing their own webinar for NH coastal adaptation workgroup

#### Coastal Resilience Index – Dr. Tracie Sempier, Coastal Storms Outreach Coordinator, Mississippi-Alabama Sea Grant Consortium

- A simple, free, self-assessment of a community's resilience to coastal hazards – ID weaknesses and strengths, identify next steps and funding opportunities to reduce vulnerability, 1-3 hrs to complete
- Mainly built environment/infrastructure but includes natural and social elements
- Not a scorecard/not published, designed for local officials, lots of value in talking about the issues
- Critical facilities tool (<http://www.csc.noaa.gov/digitalcoast/tools/criticalfacilities>), companion tool
- Train the trainer for facilitators to use the index with communities, no funding available

#### Vulnerability and Consequences Adaptation Planning Scenarios – Dr. Seth Tuler, Sr. Researcher, Social and Environmental Research Institute (SERI)

- Facilitated local assessment/structured dialog – participatory modeling, causal structure of hazards, integrate climate science and local knowledge and connect with existing planning to identify vulnerability, exposure, sensitivity – ID data needs, barriers, help prioritize
- 2-3 hour meetings, free software at [vue.tufts.edu](http://vue.tufts.edu) to create record/diagram of conversation

- ID climate stressor of interest, impacts, consequences, exacerbation of issues, strategies to cope
- Examples – Plymouth, MA stormwater runoff and coastal erosion; Boston, MA – flooding and stormwater management and winter storms, extreme heat, inform hazard mitigation plans

#### **FEMA briefing on RiskMap**

- Coastal outreach web portal ([southeastcoastalmaps.com](http://southeastcoastalmaps.com))
- Mitigation planning toolkit ([fema.gov/plan/mitplanning/index.shtm](http://fema.gov/plan/mitplanning/index.shtm))
- RiskMap Resilience toolkit – Federal, state, local resilience info (for coastal and ALL natural hazards)
- POC FEMA Region 4, [Rob.Lowe@fema.gov](mailto:Rob.Lowe@fema.gov)

Draft Notes