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2017 Coastal Master Plan

Attachment G6: Resiliency Technical Advisory Committee

Report: Final

Date: April 2017

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Table of Contents

Overview

The Resiliency Technical Advisory Committee (TAC) was developed to offer working-level guidance and recommendations on the programmatic and policy measures needed to implement a comprehensive flood risk and resilience program. The Resiliency TAC was composed of experts in the areas of climate adaptation planning, community planning, socio-economics, social vulnerability, and hazard mitigation, disaster planning, and environmental policy.

The Resiliency TAC held four in-person meetings during the development of the 2017 Coastal Master Plan. The following attachment provides detailed reports from all meetings, as well as recommendations and questions that arose from discussions.

2017 Coastal Master Plan

Resiliency TAC In-Person Meeting #1 Summary Notes

CPRA 18th Floor Conference Room (450 Laurel Street, Baton Rouge, LA 70801)
May 5, 2015 (9:00 a.m. to 3:00 p.m.)

Meeting Participants

Resiliency TAC Members: Daniel Aldrich, Diane Austin, Gavin Smith, Dan Zarrilli
CPRA: Bren Haase, Karim Belhadjali, Mandy Green, Melanie Saucier, Ashley Claro
Presenters: Denise Reed (The Water Institute), Margaret Reams (LSU), Jordan Fischbach (RAND)

2012 & 2017 Coastal Master Plan Decision Criteria

Melanie Saucier reviewed the socio-economic decision criteria that were used in the 2012 Coastal Master Plan explaining that cultural heritage was used as a decision criterion to account for how people are tied to the landscape and to illustrate how communities depend on and use coastal resources. The Planning Tool and its role as a decision support tool, the challenges encountered and the lessons learned from the 2012 Coastal Master Plan process were also reviewed. Denise Reed then discussed the decision criteria currently being pursued for the 2017 Coastal Master Plan and outlined the expected improvements that are underway. It was explained that the decision criteria can be used by the Planning Tool to build alternatives and that many decision criteria use outputs from the predictive models to estimate future effects of Coastal Master Plan projects.

TAC feedback focused on CPRA's collection of data and the use of a mixed methods approach to address challenges related to the lack of social science analysis available for the entire coast. It was noted that CPRA has already invested a great deal of time in the collection of data and should consider investing in resources and data to build its capacity to become a data clearinghouse. Although CPRA has done a great deal in terms of data collection, more needs to be done to incorporate local data and demographics into the analysis. To address this, the TAC suggested employing a mixed methods approach with case studies. It was agreed this would be a useful tool to gain a deeper knowledge of communities, track the overall direction of and address deficiencies in the CPRA program and to better inform adaptive management of CPRA programs. It was noted that case studies could also assist CPRA's narrative of model results by making connections from model results to potential impacts on communities and providing justification to convince both professionals and citizens to support the Coastal Master Plan.

The main items discussed as next steps were:

- The 2017 Coastal Master Plan must clearly define what resilience and sustainability mean for CPRA and the state in order to make sure the Plan is interconnected. The resilience indicators and long-term monitoring program should tie back to these definitions.
- Identify the factors that are most important to understand in order to carefully select which case studies to move forward with.

- Keep in mind that the case studies can inform the predictive model and vice versa and that a connection must be created between the case studies and the metrics in the analysis (what can be measured might differ from practical model inputs).

Social Vulnerability Index

Margaret Reams walked through the socioeconomic vulnerability analysis and methodology that the LSU team developed. The intent of LSU's Resilience Inference Measurement (RIM) approach was to provide an alternate method to Principal Components Analysis or other traditional approaches to define socioeconomic vulnerability that are difficult to validate. The TAC had concerns with the time period selected for determining population change, that population change over the time period was not tied to other factors (such as jobs, storm events, etc.) and that the RIM approach does not capture what is needed and does not reflect resilience. As such, TAC feedback focused on ways to improve the usefulness of the model and stressed that measures of social capital need to be incorporated (such as blood drives, volunteers, etc.). It was noted that the challenge is to match an outcome with the descriptive variables.

The main items discussed as next steps were:

- Use multilevel models
  - Use census track data and overlay voter registration data.
  - Incorporate crime rates as most social scientists view these as being highly correlated with social capital.
- Consider capturing per capita GDP.
- Conduct surveys of key neighborhoods to correlate/validate the model.
- Investigate the work coming out of economics regarding synthetic counterfactual analysis which could be useful here. (It looks at a community that has been through a disaster and a community that has not to analyze if communities that have a stable economy perform better coming out of a disaster or if bedroom communities then appear. However, this analysis has not solved the question of hazards; the output is the stability measure which confounds two different outcomes and then works backwards.)
- A feedback loop is an interesting idea that could incorporate risk reduction measures (it is not good if growth increases as a result of the program in high risk areas). The challenge is how to unpack the resilience themes (economic, environmental, etc.) individually and how to deal with their interactive effects.

Coastal Louisiana Risk Assessment (CLARA) Update

Jordan Fischbach explained how the CLARA model works, the improvements being made to CLARA for the 2017 Coastal Master Plan, and the preliminary nonstructural analysis for the Flood Risk and Resilience Program. The TAC feedback focused on model inputs and validation methods, incorporating elements of land use plans, and how CPRA's Program can influence other policies and agencies. It was suggested that CPRA use future (vs. current) flood depth scenarios in its decision making process as this could influence federal policy and to consider policies that do not permit elevation of structures on barrier islands or within certain areas where coastal erosion/vulnerability is high. It was noted that CPRA's initiatives could affect future development and as such, CPRA should involve regional planning organizations early in the process to discuss and try to influence where future development could occur.

The main items discussed as next steps were:

- Check the FEMA maps to ensure that CPRA recommendations are always above the FEMA elevation requirements; the Flood Risk and Resilience Program should set a minimum

standard that if CPRA's data shows recommended elevation heights below FEMA's recommendations, the FEMA requirement must always be met.

- Validate the assets at risk with reinsurance data to check the accuracy/magnitude. To account for the fact that not everyone has insurance, validate a sample and apply the percentage of people without insurance to the statewide data.
- Consider calculating the annual return on investment for projects. Alternately, a powerful argument is to illustrate the damages avoided due to the project implementation. In many cases, the damages avoided from one event covers the initial investment.
- Contact Samantha Medlock at Environmental Quality to try to be more involved in the federal policy conversation regarding flood risk.
- When evaluating buyouts, give preference to projects that would expand tracks of non-developable land by including a layer to the nonstructural eligibility map that gives extra points for projects adjacent to wildlife areas.
- Incorporate parish level analysis on land use into the model. If parish land use plans are digital, use them as an overlay in the model as these could point to potential growth indicators.

Flood Risk and Resilience Program Framework

Melanie Saucier provided an overview of the Flood Risk and Resilience Program framework and its evaluation criteria. The TAC feedback focused on the Flood Risk and Resilience Program's evaluation criteria, the issue of aggregate risk, and incorporating social capital/social cohesion into the analysis. In addition, the challenge of tracking and linking Flood Risk and Resilience Program dollars to an intended activity was discussed. It was suggested to use CPRA funding to provide targeted assistance on top of federal dollars for relocation of residents who participate in acquisition projects. However, it was acknowledged that it is difficult to ensure that this approach does not merely move assets to another area within the floodplain that is equally vulnerable. It was noted that in North Carolina, state staff worked with on an individual basis with residents whose homes were being acquired to keep them within the same tax base and provided funds (up to $75,000) in addition to the acquisition award to enable residents to purchase a home outside of the floodplain or an elevated home.

It was mentioned that as acquired structures are to be demolished with no re-development permitted, the responsibility of the properties' upkeep falls on the parishes and can become a strain on their resources. It was suggested to consider having a land trust assume land maintenance of acquired properties to ease the parishes' burden.

The main items discussed as next steps were:

- Work collaboratively with levee boards, municipalities, parishes, and regional planning organizations on program development and implementation.
- Investigate if there is a way to allow people to maintain their mineral rights after their land is acquired. This may greatly increase participation rates in coastal Louisiana.
- Address aggregate risk in the Flood Risk and Resilience Program to make sure new development does not take place within high risk areas.
- Consider creating a separate or special consideration for small business organizations as they are currently included in the commercial category.
- Ensure nonstructural projects are included in existing plans that have legal standing and are adopted by a regulatory body (such as comprehensive plans, disaster recovery plans, hazard mitigation plans, etc.).
    - One way to link joining/expanding community CRS participation and encourage parishes to adopt local policies that focus development and infrastructure

investment outside of a flood zone is to highlight the fact that FEMA is now giving more points in the CRS program for good land use.

- Consider the technical feasibility aspects for those structures that cannot be elevated and how the program will address this. In New York and North Carolina, when this occurred, the state built the resident a new house.
- Incorporate elements of social capital/social cohesion into the analysis by adding census data. Currently, the Flood Risk and Resilience Program only defines vulnerability by income but it is more than that; heterogeneity should be incorporated and can be done without a large investment of CPRA's time.
- Think through how to correct for assets in impoverished areas having a lesser value; less expensive homes will always be the most cost-effective homes to acquire if an asset's structure value is the only factor considered. CPRA needs to consider the effects of such a policy; asset value should not be the only factor considered.
- Research land trusts and other organizations/grants that could help maintain acquired properties.

Open Discussion and Next Steps

The second webinar is scheduled for August 17, 2015 and the next in-person meeting is planned for November 5, 2015.

Resiliency TAC Discussion Questions Responses

1. *Does the Flood Risk and Resilience Program Framework document provide sufficient detail to support the approach for analyzing and prioritizing projects and for developing a grant program for parishes to implement the mitigation projects necessary to provide comprehensive flood risk reduction for coastal Louisiana? Are there any key elements of Flood Risk and Resilience Program Framework that are missing and/or is something included that should not be?*

The Flood Risk and Resilience Program framework relies mainly on modeling to analyze and prioritize projects. Models are necessarily reductionist and rely on available data as well as the parameters determined to be most appropriate. In all areas, but particularly regarding social, cultural, and socioeconomic factors, models do not capture dynamic, complex variables that cannot be reduced to numbers. Alternative approaches, such as the formal adoption of a mixed methods approach for identifying and analyzing potential and actual projects, should be incorporated in the planning process. Rather than envisioning discussions with shareholders, residents, NGOs, and community leaders as a "feedback" process, it should be seen as the chance to collect data on ongoing interventions and to see what locals think about the future. CPRA should use qualitative, process-tracing case studies of individual communities to see how pilot programs have performed and sample communities across demographic, socioeconomic, social capital, and water depth. These findings could be used in an iterative process to "test" the quantitative results and validate them.

CPRA needs to think through the side effects of the Flood Risk and Resilience Program and the possible unintended impacts, particularly with the acquisition project component which could have a large impact and potential strain on communities. The availability and need for simultaneous temporary housing, contractors, and laborers should be considered when attempting to reduce costs by doing multiple projects within a community. Additional information also needs to be included within the Flood Risk and Resilience Program on tenant relocation costs, including the method of tenant notification. CPRA should consider the results of a policy that only looks at

acquisitions in terms of the homes' asset values as less expensive homes will be more effective to acquire. CPRA should also consider that it may make more sense to acquire homes below a certain low-value threshold due to elevation cost/benefit calculations and be aware of the decision making framework inputs that lead to that decision. Consider including an element similar to North Carolina's State Acquisition and Relocation Funds or Crisis Housing Assistance Funds programs to enable low value homeowners to purchase homes outside of the floodplain or to help them buy/build an elevated home. In addition, for acquisition project allowable costs, CPRA may want to consider the costs associated with the development of an open space plan (this may be particularly important if parishes are expected to manage acquired land, some of which may be in multiple jurisdictions outside a parish's typical authority).

The Flood Risk and Resilience Program needs to provide greater clarity on the cost-effectiveness determinations (i.e., are CPRA's and FEMA's cost-effectiveness criteria the same; are environmental and equity-related benefits captured by CPRA). CPRA's cost-effectiveness criteria should meet or exceed FEMA's. Furthermore, to communicate the cost-effectiveness of the Flood Risk and Resilience Program, CPRA should illustrate the dollars saved in damages after a flood event due to the implementation of a project(s). In the 1990's North Carolina found that the cost of their program, in terms of the damages avoided, was justified after just one storm event. This "losses avoided" amount could be added as a sixth measure of success. A number of states and local governments have developed losses avoided documents that show how future losses were avoided through hazard mitigation activities. This could be helpful to sell the program to funders and the public. CPRA may want to consider setting aside funds to do these studies.

CPRA needs to address the key issue that the Flood Risk and Resilience Program will require a substantial increase in the number and expertise of state and local staff to adequately select, monitor, and manage these projects. Those involved in hazard mitigation grants will likely be diverted following federally-declared disasters to address the influx of funding thus losing that capacity for extended periods of time. Identify ways to enhance local capacity through better integration with the State Hazard Mitigation Plan. Although funding to train parish staff is included in the Flood Risk and Resilience Program, CPRA needs to consider if there are enough people within the parishes to even be trained to complete these projects, as contractors and parish staff are likely to be overwhelmed.

CPRA should endeavor to become a clearinghouse for data. Few organizations have the capacity and as CPRA has already invested a great deal of time collecting data, it follows that additional resources should be invested to become the clearinghouse for the state's data. In addition, CPRA may want to consider using funds on the front end of the Flood Risk and Resilience Program to collect additional data and potentially take ownership of the flood insurance rate maps. In North Carolina, the state creates the flood insurance rate maps (versus FEMA). The state follows FEMA's regulations and FEMA approves the maps created, but the state owns the process. If Louisiana takes ownership of creating flood insurance maps, it will give the state access to critical data needed to make informed decisions. However, as coastal Louisiana is so dynamic this will add a major level of complexity.

Additional Program recommendations include:

- Assess "aggregate risk" in the Flood Risk and Resilience Program, namely the collective level of risk in a defined geographic space to include reducing risk through projects while accounting for continued growth in hazardous areas.
- Consider including additional Phase I data such as: structural feasibility to elevate, flood history in structure, location relative to other homes acquired or elevated, local building code/flood damage prevention ordinance, status of hazard mitigation plan, and how a project is linked to existing plans.

- Incorporate the use of existing plans in the application process by linking projects to a well thought-out/more systematic risk reduction process identified in plans (this will likely take time to achieve and requires a commitment of the state to assist locals with this through training/education).
- Define grants management and project management costs to assess, and consider supplementing, state and local capacity to include grants management and planning.
- Consider setting aside CPRA funding for planning to include: a) project integration into hazard mitigation and comprehensive plans and b) incorporation of land use into larger risk reduction strategy.
- Work collaboratively with levee boards, municipalities, and parishes on program development and implementation. Although outside of CPRA's scope, regional planning commissions should be brought in early to discuss where future development could occur since CPRA programs will affect this.

2. *Is the list of evaluation criteria that will be used to prioritize nonstructural projects appropriate and/or should alternate criteria be considered?*

The Flood Risk and Resilience Program encourages land use elements but does not require it. Land use is a key metric not adequately addressed in the Program and needs to be more tangible by including criteria to encourage/require responsible land use. As land use is used to restrict development in high hazard areas, the Program should require that submitted projects be part of or in line with a hazard/comprehensive plan. To focus infrastructure investment and development in areas outside of a flood zone, the Program should strengthen the cost-share requirement regarding adopting local policies like a property tax reduction or a higher density allowance. However, as some parishes are completely within a hazard area/floodplain, CPRA will need to think through Program implications for these areas. In addition, if the Program's main goal is to reduce risk, CPRA needs to consider if a home should be elevated if it will experience an increased risk at year 50; acquisition would then be a preferred method compared to elevation because residual risk remains after an elevation.

It is important that projects be designed in a way to account for uncertainty. The Flood Risk and Resilience Program needs to include evaluation criteria that measure the scalability and adaptability of projects. Additional evaluation criteria may include: a) scalability/modularity/adaptability (account for uncertainty in funding, climate/risk/dynamism of coastal environment); b) the degree to which projects are linked to existing plans (in particular, those with legal standing, e.g., local hazard mitigation plans); c) linkage/synergy/integration with other projects; d) individual or community-level cost sharing (beyond the prescribed 10% match). CPRA may also want to develop criteria based on a matrix delineating risk and capacity (worst case scenario-high risk/low capacity); this approach further speaks to the value of using CPRA funds to not only fund projects but also capacity building initiatives. In addition, CPRA may want to consider including "tiebreaker" criteria (e.g., CRS participation, application of land use, etc.). However, CPRA should be careful that these criteria do not result in an overrepresentation of mid and high capacity communities.

The challenges of modeling in the coastal Louisiana region are enormous; CPRA needs to utilize mixed methods/alternate approaches for the Flood Risk and Resilience Program and 2017 Coastal Master Plan. The monitoring needs to feed into the next decision for the next plan. Case study examples will be useful to demonstrate what CPRA knows and understands. Although there are a variety of unique communities in Louisiana, they can be organized and case studies will be a useful communication tool when speaking to residents.

3. *Given the presentations on decision criteria and the social vulnerability index, how can we most effectively incorporate vulnerability into a socio-economic decision criterion?*

If CPRA seeks to measure resilience, the definition of resilience should include not only risk reduction, but also adaptability, learning, and changes in behavior; these themes should be incorporated in the decision criteria.

The LSU model is not capturing what CPRA needs it to and does not reflect resilience, just population change. The output looks as if nothing major occurred in 2005 and does not reflect the reality of what occurred in the region; those working on the model would know that. The model is not capturing what happens after a major disaster because population change does not include other factors that could have explained why population may have changed. The model assumes that population change is a catchall for business decisions (employment/jobs, vulnerability, damage to housing, etc.), but it needs to incorporate indicators of social capital such as blood donations, crime rates, voting scale, volunteer rates, community groups, permits, business startups, etc. Due to the scale, social capital is lost in this model.

The role of social capital needs to be included in the Flood Risk and Resilience Program not only in terms of the impact of projects but also in terms of its effects on projects. Well organized communities have shut down all kinds of well-meaning projects - from the Chef Menteur landfill opening outside Village De L'Est to the "Green Dots" program in Broadmoor. CPRA needs to recognize that there are ways to capture social cohesion, such as by utilizing graduate students, enumerators, or surveyors to conduct surveys that include behavioral approaches and attitudinal outcomes questions to take a reading of a community (e.g., Lakefront or the Lower 9th Ward), achieve a smaller N value, and correlate/validate the models. Crime rates can also be used as a regular way to measure social capital and is available on a fine-grained scale from police departments across the country. CPRA should consider using multilevel models using census track data and overlaying voter registration data (or other types of administrative data that are collected in Louisiana) to move away from a descriptive model. If population recovery is not the only outcome CPRA is interested in, CPRA may want to capture per capita GDP as well. The challenge is to match an outcome and the descriptive variables.

In addition, the work that is coming out of the economics field regarding synthetic counterfactual analysis is interesting and could be useful to CPRA. Synthetic counterfactual analysis looks at a community that has been through a disaster and a community that has not to analyze if communities that have a stable economy perform better coming out of a disaster or if bedroom communities then emerge. However, this analysis has not solved the question of hazards; the output is the stability measure which confounds two different outcomes and then works backwards.

4. *Is the approach to develop population and asset growth scenarios clearly defined and defensible as presented or are there alternate options that should be considered?*

It is important to realize that adaptability and scalability could have physical, economic, environmental, political, etc. dimensions. The approach should build in the notion of the time period over which the growth scenarios might occur. It will be important to achieve buy-in from local communities who are often frustrated by the time it takes to complete a project. Often, a project will take so long to complete that a backer pulls out and the community then has to start the process over. By incorporating the notion of time, you can show stakeholders that ten years out the project will look like X, and if the project is not built or completed it will look like Y.

An alternate option to consider is that the assets at risk could be validated with reinsurance data to check the accuracy/magnitude. Although not every homeowner has insurance, the data could still

be useful by assuming a certain percent of people do not have insurance when the estimates are received from the reinsurance companies.

The best measure of a community in this region is the local school district, the high school catchment area, with local school districts reflecting population change even better than census data. If people can relate to something and it generates data, which tends to be a school, it is useful. CPRA could also look at where the Catholic dioceses have pulled churches out of an area as an indicator of population change. Although this would not be a predictive measure, it could be used to validate other population change data.

Lastly, while some things the Resiliency TAC suggests perhaps cannot be achieved or completed in time to be implemented into the Flood Risk and Resilience Program, this is fine as the document can, and probably should, be aspirational and forward leaning to push progress forward.

2017 Coastal Master Plan

Resiliency TAC In-Person Meeting #2 Summary Notes

CPRA 12th Floor Conference Room (450 Laurel Street, Baton Rouge, LA 70801)
November 5, 2015 (9:00 a.m. to 3:00 p.m.)

Meeting Participants

Resiliency TAC Members: Daniel Aldrich, Diane Austin, Gavin Smith, Dan Zarrilli
CPRA: Karim Belhadjali, Mandy Green, Melanie Saucier, Andrea Galinski, Ashley Claro, Zach Rosen
Presenters: Scott Hemmerling (The Water Institute of the Gulf)

Recap of the August Webinar & Field Trip Feedback

Karim summarized the topics discussed at the Resiliency TAC's August 17th webinar and asked the group to share their thoughts on the driving tour field trip to the Terrebonne coastal area. The Resiliency TAC expressed that the field trip was beneficial in providing additional context for the group and found it interesting that the Parish self-imposed a tax in order to fund the protection projects. The Resiliency TAC also found it interesting that the Parish officials talked little about the oil and gas industry and its influence on decisions about protection.

2017 Coastal Master Plan Decision Framework

Karim reviewed the steps in the technical process of developing the Coastal Master Plan, describing how the candidate projects were identified and will be evaluated in the Planning Tool to compare project benefits. The Planning Tool accounts for constraints such as water, sediment, and funding, and develops alternatives that reflect the limits of the available resources and the range of possible choices. The alternatives are then evaluated in an iterative process by the predictive models followed by a comparison in the Planning Tool where additional metrics are applied to the modeled alternatives. It was explained that environmental impact statements (EIS) enter the process after projects identified in the master plan continue into engineering and design. CPRA acknowledged that it is a challenge to address doing EIS studies on a project basis within the context of a comprehensive master plan. Other challenges include the models' inability to capture changes over time including environmental and social factors, and future growth.

TAC feedback focused on how CPRA is considering capturing aggregate risk reduction in the analysis and how it could be calculated. CPRA confirmed that the models capture the change in asset distribution and values over time. RAND does have the capability to do an aggregate risk reduction exercise, but CPRA needs to further think through how this would be done. For example would a future predicted storm be incorporated into the model once the final master plan is available to calculate future economic losses avoided? Additional TAC discussion focused on ideas for how to encourage communities to re-evaluate their hazard mitigation plans after a disaster

event. It was confirmed that CPRA structure is set up to re-evaluate the master plan after a major event and that the hope is that the master plan will serve as a pre-disaster plan for local communities and/or parishes in addition to the state's hurricane contingency plan. Furthermore, the Flood Risk and Resilience Subcommittee, a subset of the CPRA Board membership, is designed to coordinate the individual state agency efforts to facilitate streamlining future recovery funds and decision-making to ensure that the various state agencies are not operating in isolation.

2017 Coastal Master Plan Metrics Update

Scott gave an overview of the updated community boundaries for the 2017 Coastal Master Plan and the updated metrics that tie back to the master plan objectives, including Potential for Coastal Flood Attenuation, Traditional Fishing Communities, Support for Oil and Gas and Agricultural Communities, and Flood Risk to Historic Properties and Strategic Assets. It was confirmed that recreational and commercial fishing communities are not differentiated in the Traditional Fishing Community metric. Instead, CPRA evaluates if there will still be a habitat for fishing with/without the master plan where fishing currently plays a large role in communities and if these communities would experience higher expected annual damages.

In addition, Scott discussed the approach for the creation of a social vulnerability metric and explained how the approach uses Principal Component Analysis (PCA) to reduce the number of variables based on their clustering.

Flood Risk and Resilience Program Update

Melanie provided a brief review of CPRA's Flood Risk and Resilience Program and gave an overview of the 2017 Coastal Master Plan Planning Tool. It was noted that RAND will build a threshold into their analysis so that CPRA recommended elevation heights will never be lower than the federal standard of BFE +2ft. It was also confirmed that land use/regional planners are included as part of the NGO stakeholder group CPRA meets with to gather feedback. It was suggested that CPRA could potentially partner with the APA's new division, Hazard Mitigation Disaster Recovery, to assist with resources for training, education, and outreach. Gavin Smith offered to be a conduit to introduce CPRA to the division's president, Barry Hokanson.

CPRA also needs to consider and possibly re-think some of the metrics and how they indicate social vulnerability. For example, the repetitive loss properties metric recognizes those people that do have flood insurance; however, this group is more likely to be less socially vulnerable as compared to those that do not have any flood insurance. If the goal is to reach vulnerable populations, then the metric of repetitive loss properties is not likely to be the most appropriate. CPRA needs to think through metrics that can help it achieve its goal.

Flood Risk and Resilience Program Appendices

Andrea discussed Appendix A and the updates that were made to Appendices B, C, and D since they were last shared with the Resiliency TAC. It was confirmed that if a parish lacks a comprehensive plan/office, there is no state comprehensive plan that could be used in its place.

TAC feedback centered on the necessity of building local capacity in order to create quality plans, as there was some concern that CPRA is making a lot of different policy recommendations but not providing any capacity for the parishes to respond, which might cause frustration. To help show the usefulness and benefits of these plans to locals in order to obtain their buy-in and avoid substantial push-back, CPRA could establish or facilitate "peer to peer exchanges". Peer to peer mentoring allows planning professionals to connect and share lessons learned, what works, etc. This could

also assist parishes that hire consultants to create their plans as past studies have found that in these instances there is often a disconnect between the risk assessment analysis and meaningful policy and/or implementation. CPRA confirmed that there has not been an assessment or process established to see if parish plans are actually followed or if the projects in the plan were implemented. Gavin Smith noted that there is a movement towards evaluating plan implementation, which is being done at the Coastal Hazards Center at UNC-Chapel Hill where they are evaluating if plans serve broader purposes and/or are contradictory. Additionally, the TAC recommended referring to the "Safe Growth Audit" by David Godschalk as a way to frame regulatory standards and policy recommendations. The UNC hazard mitigation/planning website (mitigationguide.org) was also recommended as a resource for planning across different community types. This site is now being administered through Texas A&M University.

Future Land Use Planning and Risk Analysis

Zach described the steps CPRA has taken to address the Resiliency TAC's suggestion from the May 5th meeting that parish land use plans be incorporated into the analysis in order to point to potential growth indicators. The TAC suggested CPRA look at the Hillsborough County, FL recovery plan as it appears to be similar to CPRA's effort; Eugene (Gene) Henry is the planner responsible for the development of the Hillsborough County recovery plan. Future land use planning could also be a potential area for peer-to-peer networking or for parishes to work in tandem with CPRA to be proactive in addressing future planning in communities. It was suggested that CPRA gather information from parishes on where future development is planned and to keep an eye on transportation projects as they could spur or lead to development in higher risk areas.

Open Discussion and Next Steps

The next in-person meeting is scheduled for April 19, 2016; the third webinar is TBD and the fourth in-person meeting is planned to occur in the winter of 2016. Once available, CPRA will share the following documents with the Resiliency TAC: RAND Planning Tool Report - December 2015, Basin Wide Socio-Economic Study - December 2015, Updated Flood Risk & Resilience Program document - January 2016, and the 2017 Coastal Master Plan Metrics document - January 2016.

Resiliency TAC Discussion Questions Responses

1. *Is the new approach for creating a social vulnerability index and metric appropriate? Are there other variables or key considerations we should be including?*

TAC suggestions for the social vulnerability metric factors (components) included rethinking the use of the number of hospitals, for example: look at the distance the population has to travel to hospitals, look at the number of doctors in an area, if "hospitals" include urgent care clinics, and if clinics are exclusively serving workers compensation claims. In New York after Hurricane Sandy, the City looked at dialysis centers and pharmacies in terms of recovery. In addition, it was suggested that a greater number of hospitals might actually be indicative of a wealthier population. Another next step is to run a PCA on the international migration variable to see if there is a correlation with non-English speakers.

TAC feedback also focused on social capital factors that are not currently included in the metrics, namely those aspects that are difficult to measure but yet are important such as volunteerism, social cohesion, nonprofit, civil society organizations, and NGO density, election/voter turnout, Dun and Bradstreet information on civil institutions, and blood donations. It was suggested that

point data for social institutions – the kind found in the Dun and Bradstreet dataset - is needed and serves as a way to capture the trust level in a community. This can be done by conducting CPRA's own surveys, developing case studies, utilizing national/statewide community based research that although it would not be consistent across south Louisiana, could be applied. Surveys, focus groups, and outreach and engagement activities/meetings should be used to find out which variables are indicative of when and where people in a community gather because in most rural communities people do not necessarily join clubs and rely more on family networks. To assist CPRA in obtaining this type of feedback and read on communities, connections with locals like Reggie Dupre should be utilized to garner greater insights and participation/responses. Specifically, CPRA should create social capital surveys for communities and interest and distribute them through local guides and supporters like Reggie Dupre. Even if this can be done only in five or six communities, the "deeper dive" into local associational and social life will be invaluable in understanding how CPRA plans can affect social ties and be affected by them. It was suggested that investing in polling to acquire this type of information is worthwhile in the scheme of the larger project budgets. A subset of communities could be selected that would then be followed to see how the areas change and to track the variables to develop a set of case studies.

CPRA should consider incorporating variables that are not in the Cutter model, including volunteerism, institutions, voter turnout, Dun and Bradstreet information, blood donations, social cohesion, etc. A GIS enabled institutional map could be created. These aspects will require some degree of qualitative/case studies to capture well, but the variables currently included are all income measures. While these measures of wealth, housing prices, and other economic variables are important, they do not capture the entire story CPRA is trying to tell. Another element to think about is the ease of access of data that is associated with a metric if it is going to be used for policies and decision making. Specifically, much of the current work – modeled on that of Susan Cutter – uses variables to capture social capital that are easily available but do not measure the underlying social networks and connections. After discussing some of the Resiliency TAC's concerns and questions regarding the social vulnerability metrics, the TAC was encouraged that Scott Hemmerling was moving in the direction of recognizing which administrative data is available and would be a better data source versus relying on only Census data.

2. *Are there suggestions about how to balance making cost-effective investments versus decisions based on federal standards or socio-economics?*

TAC feedback included concerns with using cost-effectiveness as part of the nonstructural project formulation as less affluent areas will have lower cost assets that will be more expensive to mitigate. It was confirmed that CPRA is using RAND's cost-effectiveness analysis versus conducting a cost-benefit analysis similar to FEMA's. The TAC also suggested using insurance participation data as one way to sell the program to the public; alternatively, this information could be helpful to see how many people in an area do not have flood insurance.

Making decisions based on cost-effectiveness is not equitable as lower valued assets then translate to lower investment value. In addition, CPRA can expect issues to arise if they make the state's standards different from the federal requirements to receive grant funds; people do not care where the money comes from and they will be upset about the different standards. For example, after Hurricane Floyd in North Carolina the state made HMGP requirements identical to those of the CDBG program so that there was no confusion across the programs. It is important to reiterate that the oil and gas industry is moving across parish lines, if parishes have different standards it could create havoc. If CPRA does move forward with standards different from those of the federal programs, they need to have clearly defensible reasons for doing so other than that it is due to the funding source. Another element to consider is having a cost-share component. North Carolina also

created a state program (State Acquisition and Relocation Fund that offered up to $75,000 in state money on top of pre-event fair market value (the amount available through HMGP) as a way to further incentivize participation among low-income homeowners).

It is striking when reading through the variables and considerations in the models that none of them talk about the distribution of risks and benefits in terms of social equity; it is surprising that the analysis does not include language anywhere about a goal to not further disadvantage people.

3. *Given that it is a challenge for the nonstructural program to reduce risk to commercial, industrial, and other non-residential structures, are there suggestions about how to approach these types of assets? How have other states addressed this?*

For this type of program it is suggested to have some level of match, engagement, or commitment for the commercial and industrial structures as the private sector may have the resources to participate in a cost-share. One option is to focus on smaller firms that lack the capital to take risk reduction measures on their own; however, the state needs to be careful because you do not want to lose the big employers either. The state needs to pay attention to what neighboring states are doing as oil and gas and other industries are mobile. Another option is that due to the issue of equity availability for small businesses, different cost-share amounts could be used for small versus large businesses in order to protect small businesses as they are less likely to be able to come back after an event. For example, after the Deepwater Horizon disaster we saw that small businesses were unable to take out additional loans to recover.

An alternate option, if the state would be willing, is to consider providing low interest loans to businesses to engage them in mitigation actions. New York took this tactic when they launched a small business loan program. However, the program had to convert to a grant program due to the lack of eligible applicants.

Another suggestion for commercial assets is instead of looking at the structure itself, CPRA should think about the low hanging fruit available in terms of educating businesses to reduce their vulnerability on topics such as flood insurance, moving their inventory off the ground during events, having an off-site storage facility for data, where they are storing key documents/records that will be needed after a disaster to recover, and having a back-up/contingency plan. New York is doing a program similar to this involving workshops, online resources, and training on basic things that businesses can do to make them less vulnerable. North Carolina has a Small Business & Technology Development Center (SBTDC) that provides counseling, education, and resources to small and mid-sized businesses. Similarly, CPRA could tap into LSU's Stephenson Disaster Management Institute (SDMI) which offers planning services to protect businesses from disaster in addition to technical services and training and exercises; SDMI has been selected as a participant of the Coastal Resilience Center of Excellence based out of UNC at Chapel Hill. In addition, peer-to-peer mentoring could be helpful for small businesses even if across different sectors to gain insights and benefit from other's knowledge.

How does CPRA's program address mixed use structures, or does it? What type of program would be used to address homes that are also businesses? How would CPRA deal with that condition? Would different funding sources be combined, would a program be developed unique to that situation (although it might not be worth it)? New York found challenges with mixed use buildings for NFIP.

4. *Is there any feedback on CPRA's policy recommendations? Are any key elements missing or should any CPRA recommendations be further refined?*

The dynamic of the local planning is very disjointed. While it was referenced, there are no details included on how exactly CPRA will build capacity at every level. In order to make changes that stick and are useful, a percentage of funds should be set aside to make sure that plans are implemented. Details are missing regarding concrete outcomes. Coordination and capacity building at every level cannot be emphasized enough. The most successful plans are those that have the most buy-in and the most capacity. In order to do accomplish this, capacity building needs to occur in tandem with a gradual rise in policy requirements; first achieve buy-in and engagement and then increase the requirements.

CPRA is recommending parishes develop many plans but is there the available capacity in some of these areas? Or ability to build capacity? Instead, it might be better to help parishes develop a plan that is consistent with the master plan but simplified and brought down to the local level. CPRA could bring resources in the form of state experts to develop a locally led effort according to state standards. It would be one plan with different components versus multiple plans in a parish that are difficult to coordinate. To avoid communities' resistance to being told what to do by the state, CPRA needs to help communities understand the benefits of creating a plan that includes a specific group of elements; for example, explain that including these items will allow them to apply for x, y, and z grants, which is often the main driver for a parish to develop a plan at all. While it is a challenge to develop a consolidated plan, another way to help build capacity for planning is to use messengers/partners, such as Sea Grant officials, to assist with planning elements including staffing, time, data, and money. In addition, Regional Planning Organizations could be an important player in capacity building as they can help write plans and implement grants, although there is variability in their effectiveness.

Additional TAC feedback focused on potential sources of best practices for CPRA to consider, such as migitagionguide.org, the tool Safe Growth Audit, California's land use plans safety component that could be adapted for conditions in Louisiana, and Vermont's DOTD actions post-Irene. Gavin Smith offered to connect CPRA with VT's DOTD as they have been modifying their infrastructure investments to deal with a highly dynamic, eroding riverine system. It was also suggested that CPRA convene and host a best practices framework/workshop with NGOs, LSU, etc. and organize peer-to-peer mentoring or develop different types of strike teams, such as financial, planning, etc., to assist parishes and share lessons learned.

Other suggestions for CPRA recommendations include utilizing peer-to-peer mentoring and creating a parish-level role where 15-20 people float among the parishes to assist them to develop plans. As the parishes do not have to develop plans at the same time having a floating position avoids having to hire 200 people. In addition, CPRA could do something akin to New Zealand's Wellington Region Emergency Management Office (WREMO), which dedicates half of its personnel to outreach as their full time jobs.

5. *Are there any other suggestions for how the state could incentivize local planning for future development in less vulnerable areas? Is the approach to overlaying future development areas with our risk analysis and flood depth information appropriate and how best should we communicate this information to local parishes?*

Instead of incentivizing local planning by rewarding communities that go above and beyond with access to more funding, a degree of change could be built into the program that looks at the community's degree of improvement. This would avoid the rich get richer syndrome (if a

community has a little capacity to take extra steps they will receive more funding, but for those that do not have capacity they cannot raise the bar at all to receive additional funds). In addition, it is unrealistic to assume parishes can accomplish what CPRA is asking of them in a way that is consistent with the master plan; it might need to be self-performing so the parishes have tools in place. CPRA needs to have the key components of all the plans they are recommending parishes include in plans.

CPRA should identify best practices in coastal communities and share this among the parishes. One way to enable planning in a community is to bring in the resources needed to do the plan and have the locals help create a plan that aligns with the state's efforts and according to the community's values to help achieve buy-in and increase its implementation. CPRA needs to demonstrate the tangible results of planning.

In many areas there is distrust of the state and of CPRA's data. CPRA needs to figure out what aspect of the data the public is questioning; more details on this can be obtained when CPRA does their outreach with the models. Gavin Smith will share details on a Manpower Development Corp. (MDC) Emergency Preparedness Demonstration (EPD) study done at UNC that addresses this issue of trust and citizens playing a role in data collection and assessment of their own risk in the mid-Atlantic area. EPD was a five-year $2.5 million project funded by FEMA that focused on increasing disaster awareness and preparedness in disadvantaged communities in eight states plus the District of Columbia. MDC sub-partners include the University of North Carolina Center for Sustainable Communities and the Texas A&M Hazard Reduction and Recovery Center (HRRC). The study worked with individual citizens and brought them into the process to look at the accuracy of the FIRM to engage and involve them in developing their own assessment of their risk. With the variables that CPRA is currently including, CPRA needs to be prepared to have a wider conversation with citizens at public meetings as addressing risk goes into other areas (quality of schools, employment, etc.).

6. *Which key components of the Master Plan process would the Resiliency TAC prefer to engage on at the upcoming webinars and meetings?*

At the next in-person meeting, the Resiliency TAC is interested in having Kyle Graham speak with them; the TAC still feels that they are missing the big picture - how the Flood Risk and Resilience Program fits within the overall master plan and the tradeoffs between how funds are assigned.

To help provide recommendations that are applicable given the political/social context, the Resiliency TAC is interested in speaking with a four-five member panel made up of people who are not directly connected to CPRA to better understand how they engage/collaborate with CPRA. It would be helpful to understand if there is any opposition and what other collaborators are doing outside of CPRA. Perhaps representatives from GNO Inc., LSU, Lake Pontchartrain Basin Foundation, Lilly Pad Foundation, etc. who have been studying and working on coastal response and have the necessary context but are not invested in CPRA projects might be able to fill this role and speak more about the horizontal and vertical integration of CPRA to other agencies. The idea is to obtain an unfiltered view of how outside organizations perceive CPRA and to hear outside perspectives on whether they see the plan as being realistic and/or what is actually occurring and to understand why CPRA is constructed the way it is. For example, what is CPRA up against in DNR, the oil and gas industry, why is OCM still under DNR, etc.? It would also be interesting to speak with the district commander of USACE to hear their perspective.

2017 Coastal Master Plan

Resiliency TAC In-Person Meeting #3 Summary Notes

May 17, 2016 (9:00 a.m. to 3:00 p.m.)

Meeting Participants

Resiliency TAC Members: Daniel Aldrich, Diane Austin, Gavin Smith
CPRA: Karim Belhadjali, Melanie Saucier, Andrea Galinski, Ashley Cobb, Zach Rosen

Recap of March Webinar & Master Plan Updates

Karim presented the key updates to the 2017 Coastal Master Plan and reviewed the master plan formulation process and the three environmental scenarios, and discussed the analytical challenges. Karim also discussed FWOA results and noted that in Year 35 land loss accelerates, due to increased sea level rise and subsidence, which will be important to discuss in messaging the plan. The TAC asked if there is modeling that shows that the wetlands will transition up in the basin. CPRA does not see that much transformation from agriculture to wetlands as there is a sharper divide between agriculture and wetlands (landowners put levees up for sugar cane, rice farming); right now the model domain does not have that capability but CPRA does have vegetation maps that show wetlands going to open water and changing from salt to brackish to fresh marsh. The TAC mentioned areas in North Carolina that have done large scale buyouts in riverine communities and there may be lessons that could inform future efforts to relocate populations. This includes the use of the resulting open space. CPRA could consider how to enable these transitions to occur and utilize the open space as buffer. The TAC also discussed that states have taken differing approaches regarding the use of post-disaster hazard mitigation funding. Some have spread dollars across political districts (or taken a state wide approach) while others have used a risk-based decision making method. It would also be beneficial to show the costs of waiting to implement key projects– what you get now versus waiting 20 years. Given the complexities of large scale acquisition and elevation projects, it is critical to develop a clear plan to include funding of state staff to assist in the review of projects and their implementation at the local level. Also, the provision of data and the development of clear state policies are key.

Master Plan Community Metrics

Karim discussed the community metrics being used for the plan and reminded the TAC that CPRA will not have results/scores of metrics until all of the protection project results are available. The TAC suggested there could be issues of equity if comparing damages for oil and gas versus fishing communities (given more extensive infrastructure leads to higher asset values). Traditional fishing communities were defined using wildlife and fisheries data on catch and CPRA discussed these community definitions with the Community Focus Group. CPRA is trying to go beyond dollars and land to capture those things that are important to Louisiana. CPRA is also hoping to have pre-disaster conversations about post-disaster work and to talk with these institutions in advance (like FEMA and GOHSEP). CPRA would like to have conversations with communities ahead of disasters to get a feel for what they want to do; rebuild or relocate. The TAC mentioned work done in

Hillsboro County, FL for 'resending' areas that has been adopted in their county recovery plan. Eugene "Gene" Henry is a good contact as he led the development of the recovery plan. The TAC also mentioned that CPRA needs to consider the interaction among critical infrastructure elements; some elements may be protected while others are not and this may lead to large issues with interactions between facilities. CPRA is currently working on a Silver Jackets grant pilot project with funding from USACE to explore the Morgan City and Golden Meadow areas' infrastructure facilities and how their risk may change over time. Before the next meeting, CPRA will share the final report for social vulnerability metric. The TAC mentioned that in Boston they are using similar data as an input into the model versus an output to see which communities are autonomous/resilient enough to deal on their own if the city cannot get to them for a few days because they need to help more vulnerable areas first/triage. This could be something CPRA could consider when looking at nonstructural projects to be able to inform case management approach/employment/strategy.

Stakeholder Engagement Update

Ashley discussed the recent and upcoming engagement with stakeholder groups for master plan outreach and the development of Parish & Project Factsheets for the plan. The TAC suggested to remind people of the voluntary nature of the nonstructural projects and to make sure we clearly message that costs and funding are just estimates at this point and will likely change in implementation. CPRA should also clearly discuss how similar/different the nonstructural program criteria are to other programs. Ideally the CPRA project selection criteria should mirror those administered by other state agencies like GOHSEP (HMGP, HMA, FMA) and state Department of Commerce (e.g., CDBG-DR). This will significantly simplify the process for local governments (towns and Parishes) who are already overwhelmed and understaffed to administer existing grant programs. Ashley also discussed the development of Appendix H – People in the Landscape for the 2017 plan.

Flood Risk and Resilience Program Update

Melanie gave an update on the status of the program and work conducted since the last meeting. It was discussed that we are doing basic cost-effectiveness calculation using HAZUS data and improved parcel level data from USACE studies, not a traditional BCA. The TAC mentioned that low to moderate income populations (LMI) below the median income level of 50-80% might be different depending on the scale of data (census block group vs. neighborhood vs. parish level). CPRA will double check and confirm where the median income level is coming from to support the data.

The TAC mentioned that the example of relocation in the Midwest Floods where there was physical relocations of entire communities (salvaged houses and moved them), had some success. The TAC discussed which years to look at to make decisions between now and 10 years into the future considering that there will likely be another major disaster and federal funds could be available. When looking at nonstructural variants from year 0-year 25, there will be some of the same structures, and just more are selected as you move forward in time; however, sometimes the project types will change (as you shift from elevation to acquisition). We do consider that some mitigation has already been done by individuals, parishes, and federal programs but also that the overall number of structures may be overestimated to a certain degree as some areas have camps that are second homes. In project implementation camps/secondary homes would be screened out. The TAC mentioned that we should push to get nonstructural projects included in local mitigation plans and that it could be a vehicle to strengthen those plans. That said, local mitigation plans are often

weak and not particularly effective in affecting local decisions. The State could focus on improving the quality of these plans, to include an improved implementation strategy with help from GOHSEP. Lastly, CPRA mentioned that we will be testing our program and application materials with a Jefferson Parish project in Lafitte.

Open Discussion and Next Steps

- Final In-Person Meeting: November 2016
- Fourth Webinar: TBD
- Send TAC: Social Vulnerability Metrics report
- Next Meeting Topics:
    - Risk reduction project results (structural and nonstructural)
    - Community metric results
    - Draft plan analysis
    - Messaging/outreach

Resiliency TAC Discussion Questions Responses

1. **Do the nonstructural sections in the Planning Tool Report clearly describe the steps taken in the project formulation process?**
    - The technical aspects of our discussions are strong. However, the importance of developing a thorough state administrative plan that spells out how the state will administer the program and associated projects to include staffing, training/technical assistance, contracting, provision of data, project monitoring, closeout, etc. cannot be emphasized enough.

2. **Since the program will be rolled out by the parishes, how can CPRA ensure that program priorities are maintained and on the ground project implementation meets designated criteria? Especially with regards to support for socially vulnerable or LMI communities?**
    - If a parish has multiple projects and if they do not do it right the first time, they do not receive any additional funds to continue work.
    - TAC suggested we consider conducting joint roadshows with the MPO's / RPC's to describe the program and its criteria.
    - Local Floodplain Managers will play a fundamental role in implementation; they are also the key to getting local flood ordinances passed.
    - Need to consider what we can do to help build networks, stronger parish support and buy in from parish administrators – could also consider statewide workshops for contractors doing work with state grants. This needs to be done before the next disaster so support is already in motion.
    - Work with local government offices and NGOs to help train them in the complex system of grants and federal government money.
    - Work with local governments and NGOs to develop a network of trusted contractors and perhaps even locals (lawyers, managers, etc.) who can assist them in the process of implementation.
    - Suggested hiring contractors that know the federal system and nonstructural project/grant process well. A clear way to monitor their activities is needed.
    - It is a critical need to develop a robust state administrative plan. States are required to develop a state administrative plan for HMGP funding. CPRA may want to start there. However, given the scale and complexity of CPRA's multiple programs and their potential interactive effects (e.g., how will land building, elevation, buyouts, hardening

structures, etc. work together makes this much more complicated) this might prove to be difficult.

3. **Are there any lessons learned about how state recommended policies, which may be more stringent than NFIP policies, have fared in the public mind (i.e., BFE +2ft or higher)? Are there any best practices for communication strategies when rolling out such recommendations?**
   - TAC mentioned contacting the head of ASFPM - Chad Berginnis. He might have cases/specific examples of areas that have conducted acquisitions and completed large scale projects.
   - CPRA should also consider how to encourage communities to go above and beyond NFIP standards and follow ASFPM's No Adverse Impact floodplain management guidance.
   - Ensure equity in presentation of plans (do not treat buy out communities differently, for example).
   - Ensure that as many local NGOs and CSOs are consulted and involved in the process as possible.
   - Do we need translation into Vietnamese or Spanish to ensure complete participation?

4. **Do you have any suggestions on how best to inform the public not only about the nonstructural project results for areas recommended for voluntary acquisition, but also how these citizens can work with the Parish/State to agree to terms on acquisition? Are there any options CPRA should consider to help increase homeowner participation and entire community level participation to help improve overall risk reduction?**
   - Do not separate meetings to discuss voluntary acquisition from meetings to discuss the entire program and options.
   - Consider attending all town meetings and expand the number of people engaged in outreach efforts on a full time basis, not just technical experts but advocates as well.
   - Need to tell a story and think through the key issues over period of years to come to grips with the situation at hand and help people to feel invested in the program.
   - Need people at local level that are trusted, do not have to be technical experts could be minister, local school administers, elder in community that is trusted.
   - Pilot program is critical in that it should address multiple conditions (e.g., risk, capacity, experience) in order to prepare for implementation challenges. Additional factors to account for are state-level capacity and commitment (e.g., resources, experience, and commitment to work closely with locals over an extended period of time). Who at our local level should we be working with to make sure that the parish does it right or to find out what problems the parishes are facing in implementation.
   - Would also be helpful to bring in communities and states that have done mitigation projects, acquisitions, which have been successful to tell story at meetings, peer to peer sharing.
   - Bring in those who have already carried out some plans (e.g., Houma, etc.) to tell their stories.
   - Use similar narratives, not just the tool, to talk to residents.

2017 Coastal Master Plan

Resiliency TAC In-Person Meeting #4 Summary Notes

November 7, 2016 (9:00 a.m. to 3:00 p.m.)

Meeting Participants

Resiliency TAC Members: Daniel Aldrich, Diane Austin, Gavin Smith, Dan Zarrilli
CPRA/Master Plan Delivery Team: Karim Belhadjali, Melanie Saucier, Andrea Galinski, Ashley Cobb, Zach Rosen, Carly Foster, Brett McMann

Recap of May Meeting & Master Plan Updates

Karim presented the key updates to the 2017 Coastal Master Plan and discussed how CPRA arrived at the $50 billion budget for the plan. Karim discussed the budget split between restoration and protection projects and how the sources of restoration funds are fairly well-known for the next 10 years. For the 2022 plan, the program will need to be more creative in terms of additional project types and may need to invest in project development/research in order to receive different and more effective project types. CPRA is recommending 32 nonstructural project areas that total $6.1 billion for the 2017 plan; however, funding for the program is unknown. It was noted that while CPRA does not have specific funding for the Flood Risk and Resilience Program, other programs such as the Southwest Coastal Study and agencies such as the Office of Community Development (OCD) may have funds which could be applied and/or overlap with CPRA's program. The TAC suggested CPRA consider for the next plan developing resilience indicators that span economic and social development.

The TAC noted that there seems to be almost no difference along the western part of the coast between future with project and future without action. CPRA acknowledged that this is a criticism we expect to hear from the public. However, CPRA noted that there is value in investing in wetlands and marsh creation in the southwest region, but that projects cannot keep up with rising sea levels after years 35-40. Lastly, the TAC wondered if it was beneficial to keep the river running along its current route when a different outlet may become more practical. CPRA noted that channel relocation projects will continue to be investigated.

Recent & Upcoming Stakeholder Engagement Update

Andrea discussed the recent and upcoming engagement with stakeholder groups for master plan outreach and the development of the Nonstructural Frequently Asked Questions (FAQs) document. The TAC suggested that CPRA consider the use of surveys of the public at future meetings. It was also mentioned that it would be interesting to see what part of the community attendees were from, for example, to see if they do not have the funds to move on their own, what social networks are pushing or pulling them to leave, etc. The TAC suggested CPRA collect data from the January

public meetings in a short one page survey to gather information on demographics, residents' connection to an area, what they think the future will be in 25 years, what their opinion is of CPRA, to what degree they see CPRA's work as impacting behaviors and norms, etc. The TAC also stressed that unless projects are coupled with land use restrictions, the projects' effectiveness to reduce flood risk will be limited. CPRA noted that a big challenge is to get parishes to think about growth/change as some parishes do not have land use planners.

Community Inundation Analysis

Brett explained that the community inundation analysis was intended to provide CPRA with data that was intuitively suspected – communities lower in a basin fare worse over time to increases in sea level rise and subsidence. The analysis also provided a timeframe for when particular communities can expect to suffer from tidal issues. The TAC suggested that these findings be combined with a SOVI analysis to better understand how certain communities may be able to self-mobilize and move, or how to help communities with fewer resources. The TAC also wondered how these areas of inundation compared with the nonstructural project areas.

While CPRA will have an appendix in the draft plan that will talk about this data, CPRA is struggling with how to communicate this analysis when relaying the bigger picture. The TAC suggested that this data ought to be included in hazard mitigation and other comprehensive plans and that instead of including the information in an appendix, share it upfront in the main text of the document. As far as communication, the TAC recommended face to face interactions and holding several meetings in communities to have the most impact. To assist with these interactions CPRA should work with existing groups such as LA Sea Grant and other NGOs that are trusted and who will maintain the relationship with the communities over time to deliver the message.

Flood Risk and Resilience Program Update

Melanie gave an update on the Flood Risk and Resilience Program describing the nonstructural project development process and the program framework documents. The TAC suggested tracking the movement of people and looking to Mississippi to see what happens to elevations there during the next high-wind event. It was also suggested that a grad student do an overlay of the communities to see if there are areas outside of the floodplain that people could theoretically move to. Additionally it was suggested to look at Hillsboro, FL as a case study for designating "receiving" areas that face lower risk in the future.

In terms of implementing the nonstructural application process, the TAC discussed case management issues and recommended CPRA have a way to enforce standards or centralize paperwork to avoid it being lost. While there is a lot of documentation for the program, the parishes should already have most of this data as they gather similar information every year for GOHSEP and FEMA. In addition, for the LMI documentation, CPRA tried to align with other existing programs as much as possible. The TAC recommended the consideration of renter needs throughout the process and pointed out that renters are often lost in these conversations and that it will be much easier on CPRA if we replicate what FEMA and other programs require. Melanie clarified that for the parish pilot, Jefferson Parish already has a list of projects that they have been looking to execute. A TAC member suggested that the program's process be documented over time as it would be helpful to other states on a national scale. The TAC suggested monitoring should be included as part of the program and that CPRA should consider key metrics for tracking success – how do structures last over time, do structures need to be elevated more than once, where will people move if acquired, etc.

Lessons Learned & Feedback for 2022 Master Plan

The TAC discussed the following lessons learned, suggestions, and feedback for the 2022 Coastal Master Plan:

- SOVI was not especially integrated into the work- measures are largely based on economics, and not social capital (sense of place, belonging, interaction with neighbors, etc.)
- In order to get at social capital, CPRA needs to have ways of obtaining data other than off-the-shelf Census data. The easiest way to do this would be to distribute paper surveys at meetings to ask attendees about their sense of place/belonging, how long do they plan to live in their area, do they trust their first responders, etc. This would be a good first step, though it will still be necessary to collect data from people who do not attend meetings. CPRA should also encourage parishes to prioritize social capital data in their parish planning efforts. To gain more appropriate and relevant data about communities, CPRA could use a variety of techniques to do so:
    a) distribute surveys at all upcoming CPRA meetings with demographic, sense of belonging, levels of social capital, and similar questions
    b) engage local universities (such as LSU or Tulane) to help go door to door to gather information in a few select communities
    c) use mobile and land calling to capture data throughout the area
    d) use mail in surveys to capture data
- Suggest setting aside a small percentage of the program's budget for monitoring and data collection using a mixed methods approach. The example of Japan's evacuees was provided where money is set aside to track their well-being overtime.
- Look at a suite of indicators for disaster recovery and a suite of indicators for disaster resilience.
- While the cost share component of the program is good, CPRA could consider reversing this and if a parish is not following good land use practices, the parish would then have to pay more with the state paying a reduced cost share amount.
- Consider exposing communities to stormwater fees to assist with the land use planning component.
- Start building capacity and gradually hold communities accountable. Link increased standards to a real commitment to increased capacity.
- The TAC sees it as a positive that CPRA is engaging residents in conversations in what might happen in their area even if CPRA does not have money for the program yet.
- Put serious thought into where people will go after acquisitions; it is incredibly important. CPRA should track where people go after their homes are acquired and develop five or so criteria for people to consider when deciding where to move.
- Consider convening the TAC earlier for the 2022 plan in order to allow for more advice and input. The TAC would not necessarily need to meet the last year of the plan but could read reports, etc.
- Suggest using approaches such as photo voice to get input and give residents greater opportunities to share their knowledge. For example, this could involve giving 20 people cameras to take pictures of things they see that are changing in their area and then at community meetings people can go over the photos to help them connect and see the very local changes that are occurring. People are having direct experiences and it would be effective if CPRA is able to match what we expect to happen over time to the things the communities are already experiencing.
- Continue to work with LSU Ag Center to incorporate CPRA's risk maps as an overlay to their FEMA DFIRM maps information. Keep pushing FEMA to consider future flooding conditions; in New York and North Carolina, they were able to divorce the insurance maps from long term planning.

- Consider studying what the tipping point is for when people move out of a community.
- Suggest CPRA do outreach and incentivizing to potential receiving communities.
- Consider moving the discussion of where to move people up to the legislature level to coordinate and stagger the move of people/communities for schools and infrastructure purposes.

Next Steps

- Send TAC Word version of Nonstructural Frequently Asked Questions for easy editing
- Send TAC System Wide Assessment & Monitoring Program (SWAMP) Report as an FYI
- TAC to send CPRA literature on Resilience indicators to review

Resiliency TAC Discussion Questions and Responses

1. **Nonstructural FAQs.** Does the Nonstructural Frequently Asked Question document clearly describe the overall program, projects and answer questions that stakeholders, the public, and parishes may have? Are there any other suggestions that we should consider for this document?

2. **Community Inundation.** Given the community inundation data presented, how should CPRA best utilize and depict this information without misinterpretation to the public? How could CPRA advance this analysis to encourage broader coordination between agencies and municipalities in infrastructure planning for changing future conditions?

- Suggest making the Community Inundation Analysis excel chart available for download for each community; it could be very powerful and impactful for communities.
- Consider adding population statistics, LMI, and/or SOVI stats to the communities facing inundation from the Excel chart.

3. **Program Implementation.** Are there any suggestions on how best to move the program forward after the 2017 Coastal Master Plan is finalized given that there is limited available funding for implementation? How should the state pursue funding opportunities, work with other state and federal agencies on match programs, or conduct a pilot implementation project?

- Work with parishes and communities to identify those that are interested in moving ahead without waiting for the state. Work with those parishes and communities to develop pilot projects and apply for funding for them, providing matching funds where possible to those who are establishing processes that are inclusive and utilize best practices.
- Given the growing literature on the importance of social capital for resilience, CPRA should consider investing funds into capturing relevant social measures such as levels of trust, civic engagement, neighborhood problem solving, and so forth. Even if only on a small scale, these qualitative and quantitative measures of social cohesion and trust can provide insights into the types of communities that are most vulnerable.

4. **Voluntary Acquisition.** For those specific communities with structures recommended for voluntary acquisition in the master plan, what are some strategies to encourage planning for these acquisitions in the next 20-25 years? Who are all of the partners/stakeholders who should be included in these initial conversations and throughout the process? How can CPRA work to provide these communities with data, tools, and materials to help these conversations?

- Formal (e.g., elected and appointed officials at city or parish level) and informal (e.g., church and community-based organization leaders, local school officials) leaders should be brought into these conversations right away. They also should review and analyze the data available and model results, noting levels of certainty, margins of error – where is there the greatest confidence in the predictions? Where is there little confidence? How do the uncertainties in data affect the final predictions? These people, with CPRA's support, also should identify possible funding sources for acquisitions and the requirements and expectations of each of those (e.g., future land use).