

Summary and Recommended Regional Action Plan

A Report of the
Emergency Preparedness Committee on Sea Level Rise

A high-speed photograph of a water droplet falling into a pool of water, creating a series of concentric ripples. The droplet is captured in mid-fall, just above the surface, with a small splash of water below it. The background is a solid, deep blue color.

Regional Community Institute of Northeast Florida, Inc.
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Dipping Our Toes in Rising Waters

Northeast Florida is blessed with an abundance of coastal and river waterfront. The waterfront is a factor in economic development and quality of life for the area. It is vital to the region to monitor and take appropriate actions to insure the continued vitality of this natural resource.

A century's worth of data indicates that currently water levels of the oceans, seas and rivers are rising. While there will be endless debate over the cause of this rise, a review of history shows cycles of oceans and seas rising and falling. Based on data driven observations, it behooves Northeast Florida to begin the planning process for a cycle of rising water that could be as much as six feet over the next one hundred years.

The Northeast Florida Regional Council, a council of regional community leaders, believed it was important for the region to begin the planning process. The Regional Council asked the Regional Community Institute of Northeast Florida, Inc. to review sea level rise data and make recommendations to the Council on appropriate actions for the Region to undertake.

RCI assigned this task to its Emergency Preparedness committee. A dedicated group of nearly fifty individuals with a vast array of technical knowledge and expertise in the subject area followed a year-long plan to provide the Council with a report that reviewed and analyzed the abundance of data on sea level rise and then developed recommendations based on that analysis.

This report offers the committee's thoughts and ideas on how the region can begin the long term planning for protecting the community's valuable infrastructure and coastal assets during a cycle of rising sea level. Most of these recommendations center on recognizing the need for community leaders to include sea level rise in their thought process as they make decisions on land use, infrastructure placement and community sustainability throughout the 21st century.

The Regional Community Institute Board wishes to thank the Emergency Preparedness Committee, chaired by David Reed, for all of their dedication and hard work in the preparation of this report. A special thank you must be extended to Margo Moehring, the Institute's Executive Director, whose leadership and tireless efforts made this report a reality. The Board would be remiss in not recognizing Brian Teeple, the Regional Council's CEO, for his vision, courage and leadership in tackling the emotionally-charged subject of sea level rise.

The Regional Community Institute encourages the leaders of Northeast Florida to review this report, share it with their communities and begin the process of incorporating the recommendations into the region's planning cycle.

Sincerely,



Bob Page
Chair, Regional Community Institute of Northeast Florida, Inc.

Summary

The *Regional Community Institute of Northeast Florida, Inc.* (RCI) is a non-profit organization created by the Northeast Florida Regional Council (NEFRC) to consider policy issues. In January 2012, NEFRC put out a call for information and opinions related to climate change in Northeast Florida, in response to an action item contained in First Coast Vision, the 2011 RCI-created vision for growth and development in Northeast Florida for the next 50 years. The overwhelming response to the outreach on climate change was information and opinions related to sea level rise. In August 2012, NEFRC assigned sea level rise as a policy issue to RCI. RCI assigned the topic to its Emergency Preparedness Committee. Their one-year work program included determining whether the seven county region (Baker, Clay, Duval, Flagler, Nassau, Putnam, and St. Johns counties) is vulnerable to sea level rise. If they deemed the region vulnerable, they were to review the available information and make assumptions as to range and level of rise and planning timeframe. They were then to work with coastal or waterfront local governments on community resiliency assessments, using the assumptions. Their final task was to take the best practices and lessons learned from the local government experience and make policy recommendations to the NEFRC in October 2013.

The Committee approached its charge assuming there is a clear benefit to a region, if it is vulnerable, in being ready for change, and being aware of changes impacting other regions. The Committee heard from experts and considered work done elsewhere. They paid particular attention to the Southeast Florida Regional Climate Action Plan. While Southeast Florida did modeling, considered scientific evidence at length and spent several years and much effort in developing their action plan, Northeast Florida had a shorter timeframe and an unfunded program. The Committee volunteers therefore reviewed, with great appreciation, the work of those that had gone before and relied on their findings and the input of local experts. Based on what they learned, they decided Northeast Florida is vulnerable to sea level rise and the region should consider the potential for impacts of 6", 1', 3' and 6' of rise. The committee made observations based on a robust set of community resiliency assessments, designed to get a conversation started within local governments. They also created an extensive list of policies that they recommend NEFRC, other regional entities and local governments consider as they consider planning for sea level rise. These are to be found in the "Committee Compilation" portion of the report. That report compiles the recommendations of several subcommittees and individuals on the Committee, as well recommendations that were created based on full committee discussion. Recommendations are separated into issue areas, but ideas often appear in more than one issue area. The Compilation document also includes the list of communities that participate in the Community Rating System, as well as links to sea level rise initiatives in Florida.

Regional Action Plan

The following are the recommended actions found to be immediately doable with a clear responsible party.

Action: Create a Clearinghouse on Understanding Risk

NEFRC should create and maintain a clearinghouse website for regional sea level rise data, with links and resources that will help individuals, organizations, communities, and governments who want to learn about sea level rise. This should include:

- Tools and links that will make it as easy as possible for an individual with questions about their property, flooding and sea level rise. Include how to check the elevation and flood zone of your property, what that means in your location as to how you must build and flood insurance rates, and what your options are to lower insurance rates. Use the local/regional perspective to maximize the impact of existing resources, rather than creating redundant resources.
- Information on building techniques that mitigate risk in any area with a potential for flooding.
- Regional maps of 6", 1', 2', 3', and 6' of sea level rise should be posted on the website and included in the vulnerability maps called for in the Strategic Regional Policy Plan.
- Links for local governments that are considering public or private investments and need explanation of the tools available to create scenarios of sea level rise for planning purposes. Ultimately, it may be possible to simply link to the Department of Economic Opportunity statewide effort to compile a comprehensive guide to all tools and provide guidance as to their usefulness for various applications.
- Links that allow individuals and communities to link disaster planning to sea level rise, so that data is shared and flooding or wind events can be considered when considering risk mitigation.

Action: Engage the Community

The National Oceanographic and Atmospheric Administration (NOAA), University of Florida, Sea Grant Florida, Sea Grant Georgia, the University of Georgia, NEFRC, and the City of Fernandina Beach are planning a Northeast Florida/Southeast Georgia workshop targeted at local government officials to begin education and further engagement on sea level rise.

NEFRC should form a voluntary educational working group to advise NEFRC in identifying community needs, creating, and vetting educational materials, staffing a speaker's bureau and providing input into the clearinghouse. They should be guided by the following recommendations of the RCI Committee:

- Begin and end with an equity framework. Engage all communities, including those not traditionally involved in the planning process, from the beginning of dialogue on sea level rise, and consider impacts on them.
- Partner with existing programs and agencies such as the University of North Florida's Port and Coastal Engineering Focus, University of North Florida Environmental Center, Jacksonville University's Marine Science Research Institute, Flagler College Coastal Environmental Science, the Guana Tolomato Matanzas National Estuarine Research Reserve, St. Johns RiverKeeper, St. Johns River Alliance, Putnam County Environmental Council, St. Johns River Water Management District, Florida Department of Environmental Protection, the Sierra Club, North Florida Land Trust, Trust for Public Lands and others. Determine the strengths of each and work to make them even stronger in terms of research, breadth, and depth of trends and data, education and initiatives.
- Use regional and academic resources to address the shortcomings some communities identified in their social systems as they were doing community resiliency assessments, to engage students and ethnic groups with the community.
- Make full use of the social systems that Northeast Florida communities consistently indicated as robust, including faith-based, neighborhood, business, and civic groups.
- Maximize the potential of strong involvement of the community in schools.
- Creating a Regional campaign using local and Regional agencies that have an interest in protecting natural resources and infrastructure.
- Using a wide variety of Social Media to reach a broader range of stakeholders. Link all related agencies to one main location (website and/or blog). Use Facebook, Twitter, LinkedIn, Google Plus, Instagram and Pinterest at a minimum.
- Collaborating among counties, municipalities, and appropriate agencies to develop and carry out outreach and educational programs to increase public awareness of sea level rise and adaptation strategies to minimize damage and risk. Prepare and implement messaging programs associated with the impact of sea level rise on natural areas including upland, wetland, marine, coastal, near shore, and riverine environments
- Providing outreach to residents, stakeholders and elected officials on the importance of addressing sea level rise adaptation and preparedness and develop a program to educate specific interest groups about the benefits of proposed actions.
- Initiating a public education campaign to educate residents, business owners, and policy makers on the merits of preserving open land as an aid to adapting to sea level rise in the region.

NEFRC should partner to create a working group to develop awareness of the need for efforts to deal with the effects of sea level rise on the food supply, water supply, energy supply,

drainage, community stability, and housing in the region, so as to foster the development of sustainable and resilient communities.

Action: Save Money

Achieving a goal of Northeast Florida universal or increased participation in the Community Rating System (CRS) is an area where a regional approach and partnerships make a difference, and communities can save money for their residents and businesses. The recommendation was made at several RCI Committee community resiliency assessments that NEFRC should find a way to work with non-participating communities to facilitate their participation in CRS. The potential for financial benefits to communities is part of the message on sea level rise that is most likely to resonate in Northeast Florida. This could take the form of creating partnerships to perform CRS functions. In addition, the educational tools that CRS-participating communities need could be developed at the regional level and made available to all, thereby eliminating the need for duplication of effort.

There was lively discussion at each community resiliency assessment about planned improvements and the lifespan of existing community assets. It was expressed that a tool to assist with identifying the options for types of assets and quantifying the costs and benefits associated with each would be of use. These discussions preceded the release of the NOAA Coastal Services Report “What will Adaptation Cost?” Now that a clear methodology exists, assumptions need to be developed for Northeast Florida so that local governments in the region can look at the costs and benefits of adaptive measures as they consider public investment. NEFRC proposes to develop teams with students from the University of North Florida Environmental Center or other partners to do analysis of proposals to use as pilots, in advance of developing a set of assumptions for use in Northeast Florida.

Action: Collaborate and Leverage Success

Participants in community resiliency assessments recognized there are communities that are already using adaptation techniques or mitigation strategies that are working. We can use that regional experience as the basis for strong recommendations based on success.

Close collaboration by NEFRC and its partners with the Matanzas Bay study, so that its analysis, recommendations and outreach are fully integrated into the actions recommended in this report. Ensure consistent and aligned messaging and education.

There is a current program by the Jacksonville Marine Transportation Exchange (JXMTX) with the NOAA in cooperation with the Jacksonville University (JU) Marine Science Research Institute (MSRI) to collect and study data and trends for biological communities. Physical Oceanographic Real-Time Sensors (PORTS) will be monitored by the National Weather Service and will go

online late in 2013. The data collected on water temperatures, salinity and tidal patterns will help with future estimates of sea level rise in Northeast Florida.

Clearinghouse should have descriptions of adaptation approaches used elsewhere and links to research communities that have used them.

In 2010, the City of Jacksonville began developing a Low Impact Development (LID) Manual for Duval County, in cooperation with state agencies and area stakeholders. The manual is part of a larger effort to promote “green infrastructure” to address a variety of environmental issues. The Manual is being added in 2013 to the City Design specifications and to the Land Development Procedures Manual (Redbook) as an option for developers, engineers, and planners, and will be available on the City web site. Communities in Northeast Florida can use this work as a model.

In addition, LID has been mandated for all Federal agencies by Act of Congress since 2007, and numerous existing Best Management Practices (BMPs) have been installed at Naval Air Station Jacksonville. The installation’s Environmental staff can provide site visits and information by prior arrangement.

Action: Engage the Business Sector in Long Term Resiliency

Create a Public/Private Regional Resiliency (P2R2) Committee under the auspices and with the staffing of NEFRC, with the following goal: Develop a regional strategy that will incentivize population and private development to locate outside of vulnerable areas.

P2R2 should measure progress by the following metrics: Property values and number of private owners of lands in Northeast Florida at risk under a 1’, 3’, and 6’ sea level rise scenario, percentage of Northeast Florida tax base at risk from a major hurricane like Sandy, and percentage of tax base in non-vulnerable areas.

P2R2 should set progressive targets for reducing the number of private owners and the percentages of at-risk tax base.

P2R2 should consist of representatives of the following sectors/organizations: Homebuilding, Risk Management, Natural Resources, Mortgage Banking, Law, Engineering, Urban Land Institute North Florida, JaxUSA Partnership, Realtor, Economist, NEFRC, RCI, County Government, Municipal Government, and Planning.

P2R2 should meet at least twice a year, and consider the strategy they believe appropriate to Northeast Florida. Once it is agreed upon, they should present it to the NEFRC and the region. Further meetings should consider the results of the various action items and the trends

associated with the metrics. P2R2 should recommend if, how and when to implement the strategy.

Acknowledgements:

The Committee is indebted to the following presenters, listed in the order of their presentations, who shared their time and expertise during the Committee’s work:

- **Glenn Landers**, P.E., Planning and Policy Division, US Army Corps of Engineers, Jacksonville District
- **Emily Montgomery**, Former Coastal Training Program Coordinator, Guana Tolomato Matanzas National Estuarine Resources Reserve
- **George Porter**, P.E., Water and Wastewater Systems Planning Specialist, JEA
- **Jim Murley**, Executive Director, South Florida Regional Planning Council
- **Scott C. Hagen**, Ph. D., P.E., D.CE, D. WRE, Professor, Director CHAMPS Lab, University of Central Florida
- **Peter Sucsy**, Ph. D., Supervising Engineer Scientist, Division of Water Resources, St. Johns River Water Management District
- **Liz Reynolds**, CPCU, API, State Affairs Manager- Southeast Region, National Association of Mutual Insurance Companies
- **Adrienne Burke**, Community Development Director, City of Fernandina Beach
- **Thomas Ruppert**, Esq., Coastal Planning Specialist, Florida Sea Grant College Program

The Regional Community Institute wishes to especially thank the active members of the Emergency Preparedness Committee on Sea Level Rise:

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| Allen | Shauna | Natural Resources | National Parks Service |
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