

**TAMPA BAY REGIONAL PLANNING COUNCIL
REGIONAL RESILIENCY REPORT**

Implementing Florida's 2015 Peril of Flood Act:
Improving Local Government Capacity to Assess Vulnerability and Develop Adaptation
Strategies to Mitigate Flood Risks

**INTEGRATING NATURE-BASED ADAPTATION, LOW-IMPACT DESIGN, COMMUNITY
REDEVELOPMENT AREAS, AND ATTAINABLE HOUSING IN THE TAMPA BAY REGION INTO
EFFORTS TO IMPLEMENT THE 2015 PERIL OF FLOOD LEGISLATION IN TO LOCAL GOVERNMENT
COMPREHENSIVE PLANS**

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Project Partners

The Tampa Bay Regional Planning Council

Manatee County Government

University of Florida Resilient Communities Initiative

Collaborating Academic Partners

UF Shimberg Center for Housing Studies

UF | IFAS Extension—Program for Resource Efficient Communities

USF College of Marine Science

USF Department of Urban and Regional Planning

USF School of Architecture Florida Center for Community Design and Research

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EXECUTIVE SUMMARY

Through this Peril of Flood Project, the Tampa Bay Regional Planning Council (TBRPC), along with its project partners Manatee County Government, the University of Florida Resilient Communities Initiative (UFRCI), and the University of South Florida (USF) focused on a multi-pronged approach which addressed nature-based adaptation and community resiliency factors not currently addressed in most vulnerability assessments (VAs) focused on publicly-owned infrastructure facilities.

Environmentally-based resiliency approaches, such as restoring wetlands and re-naturalizing shorelines or maintaining open spaces can provide buffering from storm surge and flood reduction benefits. Identifying vulnerable areas can, in turn, provide the data and illustrative mapping to support policies, principles, and strategies to inform Comprehensive Plans, especially Coastal Management Elements and redevelopment components to enhance future resiliency.

Understanding of the broader social equity and vulnerability issues associated with changing climate and certain housing segments and populations, currently lags behind knowledge of the vulnerabilities of infrastructure and the built environment. Increasing the communities' and region's understanding of social vulnerability and use of planning equity principles can forewarn unintended consequences from maladaptive development and redevelopment.

This Project assessed local government implementation status, provided training on strategies, tools, and projects that can be included in VAs, and empower local governments to amend their Comprehensive Plans and actively advanced Manatee County's efforts, to achieve greater resilience in meeting Peril of Flood requirements.

- **Nature-Based Adaptation:** Employing environmentally-based resilience approaches, such as restoration of wetlands and re-naturalized shorelines, can provide buffering from storm surge and overall flood hazard reduction. A major focus of this Project was to enable local governments to identify and describe areas that are vulnerable to coastal flooding, and identify areas that can become more resilience by incorporating environmentally-based adaptation techniques, enhancing use of green infrastructure and low-impact design (LID) projects.
- **Social Vulnerability, Housing, and Community Redevelopment Areas (CRAs):** Increasing the communities' and region's understanding of social vulnerability and planning equity principles may prevent unintended consequences from maladaptive future development and redevelopment policies and principles. The Project team met with CRA experts, the United Way Suncoast and other community organizations to gain an increased understanding of unmet community needs, demographics, and social vulnerability factors. These meetings informed the Project Team's understanding of short- and long-term impacts to public and private affordable housing and Community Redevelopment Areas (CRAs).

Better understanding and support for social vulnerabilities is critical to include policies to mitigate against such vulnerabilities in multiple Comprehensive Plan elements toward more resilient communities. Project activities supported the incorporation of the [CDC SVI tool](#) and other datasets into VA processes. Participating local government staff and local consultants defined ideas for pilot projects, new resilience incentives and visual tools for community engagement, and also called attention to future impacts such as gentrification, and the need to update Coastal High Hazard Area plans. They also identified the lack of support for multi-family developments to ensure community housing needs and prevent further loss to the already limited availability of housing.

- **Manatee County Resilience:** Manatee County was a full partner in this Project. Planning staff were already engaged in an overhaul and update of their Post-Disaster Redevelopment Plan (PDRP), “redevelopment component” of the Coastal Management Element of their Comprehensive Plan, and were seeking to include the municipalities in resilience and redevelopment planning efforts. Manatee County elected officials and staff at all levels participated in numerous meetings and workshops to better address their needs for implementing the Peril of Flood requirements and other resilience efforts. As a result of this Project, Manatee County staff strengthened their already robust GIS skills and resilience knowledge, created new mapping tools and increased their ability to infrastructure and community vulnerability. Their one-day resilience workshop attracted more than 90 people, enhanced relationships with cities and produced community recommendations for the County to use in plan updates. The grant has motivated staff to develop a Resilience Action Plan and will make updates to plans in FY 2020.

Sustaining the Regional Resilience Coalition

The TBRPC formed the Tampa Bay Regional Resilience Coalition and held a signing ceremony in October 2018. As of June 2019, the Resilience Coalition includes all six counties and 22 cities in the RPC region, which have signed a Memorandum of Understanding. The POF Project activities supported this new initiative by providing opportunities for elected officials and local government staff to learn about specific risk information and discuss potential strategies with their peers. The cities of Holmes Beach and Bradenton Beach joined the Resilience Coalition within one month of attending the Manatee County Resilience Workshop.

The Project created opportunities for knowledge sharing among local government staff, and also produced multiple maps and tools for local users which begin to integrate housing and other community risk factors. The project survey, roundtable discussions and multiple evaluations defined additional needs for technical assistance. The Project also identified the different support and resource needs of smaller cities, compared to larger cities and counties. The TBRPC and Coalition will use the user-defined information to develop new continuing education programs.

Task 1: Survey to Assess Status and Training Needs and Developing Best Practices Checklist

OVERVIEW

All Florida local governments are required to amend their comprehensive plans to comply with the requirements of the Peril of Flood by or before the deadline for their regular, statutorily-required comprehensive plan evaluation and appraisal (EAR). The initial phase of the Project included an online survey which assessed the status of Tampa Bay Regional local governments' Peril of Flood implementation efforts, and determined needs for resources, tools, and training to address the key categories of Peril of Flood requirements. The Project also proposed to create a Best Practices Checklist for Conducting and Integrated Vulnerability Assessment.

SUMMARY

On September 17, 2018, the Project Team held the Project Launch Meeting with representatives from Manatee County (Team Manatee) and the Shimberg Center for Housing Studies at the Manatee County Emergency Operations Center (EOC). After several internal meetings, the Peril of Flood Implementation Project Team (Project Team), developed the survey and draft Best Practices Checklist (Checklist)

The preliminary draft Checklist was compiled using the Southeast Compact Regional Climate Action Plan (RCAP) 2.0, and the Maryland Coastal Community Resiliency Indicators and Rating Systems report and other tools to define objectives, policies, and strategies. The draft was reviewed by the Project team and other participants throughout the Project. On November 2, 2018, the Team gave an overview at the One Bay Resilient Communities Working Group (One Bay Working Group) to solicit input. The One Bay Working Group offered suggestions. The Project Team then disseminated the online Survey to elected officials, TBRPC council members, and local government staff via TBRPC and Manatee County stakeholder mailing lists. Additional emails were sent, and printed reminder cards were distributed at the December 2018 TBRPC Council meeting to solicit additional responses.

As of June 2019, the 22-page draft Checklist also includes a section focused on policy considerations, goals and objectives. The Checklist draft was revised after the Community Vulnerability Workshop to include a Housing Section. The TBRPC proposes to engage subject matter experts for additional critical review in Summer-Fall 2019. The designed draft was submitted on June 28.

Survey was deployed to local governments to assess their current comprehensive plans, ordinances, and processes and identify unmet technical information needs. The Project Team analyzed the results of Manatee County survey responses. The team defined priority topics and level of training support needed for the two technical assistance workshops to be planned.

LESSONS LEARNED.

Need for Increased Communications. From the survey and discussions, the Project Team learned that there was limited awareness of the Peril of Flood requirements, which varied among and within local governments. Many elected officials expressed general awareness but had little understanding of the details and requirements. Notably, staff awareness appeared to lessen the farther the employees' job responsibilities tended from direct involvement with the local comprehensive plan. The survey data and in-person reactions to the Checklist indicated a need to create a better understanding of the role of a VA in developing strategies to implement Peril of Flood requirements.

RECOMMENDATIONS/NEXT STEPS.

Ongoing communications about resilience and requirements of Peril of Flood is needed. To assure that the Peril of Flood requirements and the underlying policy background were communicated systematically, the Project Team decided to include an introductory overview of Florida resilience efforts at the state level and of the Peril of Flood legislation in each of the subsequent meetings and workshops.

TASK 2: Supporting Vulnerability Assessments (VAs) and Nature-Based Adaptation

OVERVIEW

Using environmentally-based resilience strategies can reduce flood impacts due to storm surge and extreme rain events. The focus of this Project task was to increase local governments ability to identify areas that could become more resilience by incorporating environmentally-based adaptation techniques, enhancing use of green infrastructure and low-impact design (LID) projects.

The two main goals of the second task included providing technical assistance meetings to focus on local government efforts related to VAs; and a workshop to increase knowledge of environmentally-based adaptation strategies and mapping to support Peril of Flood data requirements.

The Project Team held meetings and conference calls with staff in Manatee, Pinellas, and Hillsborough counties to better understand the scope of local efforts and specific unmet technical information needs. TBRPC also met with recently established resilience working groups in Pasco County, Citrus County, and Hernando County to discuss status of their VAs, get updated on Peril of Flood planning efforts, and collect input from different departments about perceptions of changes in local weather, climate risks, and interests in nature-based adaptation strategies.

The workshop was designed to demonstrate feasibility and benefits of nature-based engineering solutions to motivate attendees to map potential natural assets. The workshop focused on shoreline projects to provide surge and erosion protection for private and public property. Sessions also addressed criteria for potential open space, site assessments, engineering and planning considerations, and benefits to ecological systems. The overview and case study of Robinson Preserve in Manatee County demonstrated how coastal open spaces could be designed to anticipate ecosystem changes to SLR, improve coastal protection for the community, and provide recreational amenities.

SUMMARY

The workshop was held on March 21, 2019 at the Tampa Bay Regional Planning Council office and included leading experts: Jerry Murphy, AICP, CFM, Research Associate, University of Florida Resilient Communities Initiative; Thomas F. Ries, Southeast Biological Services and Restoration Director, Environmental Science Associates; Damon Moore, Environmental Program Manager, Manatee County Parks & Natural Resources Department; and Laura Geselbracht, Senior Marine Scientist, The Nature Conservancy.

The workshop attracted 47 attendees representing a diverse group of professionals from local government floodplain managers, planning, public works, and stormwater management staff and private sector from Hillsborough, Pasco, Palm Beach and Manatee counties, the Hillsborough Planning Commission, the Sarasota-Manatee MPO and the cities of Clearwater, Gulfport, St. Petersburg, University of South Florida planning faculty and planning students. Additional attendees included staff from the East Central Florida RPC, planning staff at MacDill A.F.B., and employees from leading engineering companies.

After the workshop, attendees were better equipped to:

1. Understand how statutory Peril of Flood provisions relate to community planning for coastal areas;
2. Understand how nature-based strategies can augment or replace conventional structural engineering approaches to surge mitigation and stormwater management;
3. identify local sites that are suitable for nature-based adaptation projects;
4. develop a list of priority nature-based flood and resilience projects that consider climate change impacts (extreme weather, storm surge, sea level rise);
5. understanding of project implementation process, steps and different technical and tools to evaluate different projects;
6. define and evaluate the risk reduction benefits to infrastructure and ecosystem services benefits for specific projects;
7. identify barriers in local government plans, policies and processes that need to be updated;

LESSONS LEARNED

The workshop was highly rated by attendees who completed the evaluation. The session *Principles of Restoration and Adaptation to Decrease Flood Risks* was rated extremely useful or very useful by 93 percent of attendees. *Identifying and Assessing Potential Sites* was the second highest rated session, with 86 percent of attendees rating it extremely useful or very useful.

The evaluation assessed attendees' status of specific implementation activities (had been completed or how likely they were to implement) in the next 12 months. Results found that only two activities had some level of completion: 40 percent indicated that they had completed "mapping and categorizing green spaces", and 24 percent had completed "defining public lands that experience repetitive flooding as opportunities for Open Space Preservation." All other activities were below 10 percent.

The top three actions attendees indicated intent to act were:

- 1) conduct site assessments for living shorelines or enhanced seawalls;
- 2) look for proposals to develop plans or implementation;

- 3) create green infrastructure or nature-based language for the comp. plan/coastal management element.

Thirty-five (35) percent indicated they *would definitely conduct* site assessments for living shorelines or enhanced seawalls, and 40% indicated that they were *moderately likely to conduct* site assessments.

RECOMMENDATIONS/NEXT STEPS

This phase of the Project increased the level of attention and interest in nature-based adaptation. That interest will be sustained in the future by TBRPC initiatives to support a community of practice. The survey and workshop attendees defined technical topics and policy issues. In May, the TBRPC and local government staff involved in the Regional Resilience Coalition agreed to form a new Shoreline and Seawalls workgroup which will work within the Coalition to develop a guidance document and support local governments.

The TBRPC will work with the Tampa Bay Estuary Program, and other environmental partners to develop a continuing education plan for the next year to address specific technical and policy training needs. Additional TBRPC efforts will include discussions at the Resilient One Bay meetings on innovative design projects that can address inland flooding, model language for various plan elements, including Coastal High Hazard Areas Long Range Development codes and other specific technical needs to increase site assessments and mapping.

OTHER INFO:

The application for APA CMs was supported by the Florida Planning and Zoning Association: 5.5 CECs were provided. See link to [APA](#).

Presentations are available here: <http://www.tbrpc.org/peril-of-flood-workshops/>.

TASK 3: Linking Affordable Housing Agencies & CRAs in Resiliency Planning

OVERVIEW

Vulnerability assessments and resilience planning efforts need to be informed by a robust understanding of risks to community populations and affordable housing. Understanding the socio-economic considerations of specific populations, and potential climatic impacts to housing, transportation infrastructure, and economic services of vulnerable neighborhoods are key. Additional assessments of comprehensive Plans, including local development regulations, and redevelopment components are needed to ensure support for resilience and reduce potential risks. This Project (Task3) implemented a multi-level effort to increase the Project Team's and local government partners' understanding of the threats to vulnerable community populations, housing stock, and Community Redevelopment Agencies (CRAs).

SUMMARY

The Project Team and unfunded partners at the University of South Florida Department of Urban and Regional Planning, USF School of Architecture and UF Shimberg Center of Housing Studies developed new information, resources, GIS maps, online tools and presentations which supported knowledge-sharing and discussions at the CRA meetings and workshops. The resources are being disseminated through the Project Team (TBRPC, UF, and Manatee County) websites.

The project deliverables included the following:

- 3.1. two, 90-minute meetings to discuss Community Redevelopment Areas and affordable housing -- Hillsborough County on June 12, and one in Pinellas County on June 13;
- 3.2. 1-day workshop "Conducting Social Vulnerability Assessments" on June 14.
- 3.3. Produced maps and data layers and updates to plans for local governments;
- 3.4. Report with recommendations from the CRA meetings and Workshop.

Approximately, 55 professionals were engaged through the two CRA meetings and the 1-day workshop. The group included representatives from four counties, two county Municipal Planning Organizations, nine cities, and six CRAs/ redevelopment areas, several planning and engineering firms, and community organizations involved in social equity issues. Professional roles were also diverse – with HR representatives from major beverage companies to building construction specialists, and many were also first-time TBRPC workshop attendees. The meetings and workshop were catalytic in defining unmet needs and creating new efforts.

New Resources Produced for the Project

- Manatee County Housing Stock Analysis and Map
- Maps of CRA locations and flood/SLR risks
- Map of Mobile Home Park Locations
- Overview Presentation of Affordable Housing Risks and Impacts:
- Housing Section Added to the Integrated Vulnerability Assessment Checklist

Meetings and Workshop Highlights

The CRA meetings started with updates from the attendees on their general CRA planning and management projects. The Project team then reviewed flood and surge maps of the updated regional SLR projections from the Tampa Bay Climate Science Advisory Panel and facilitated discussions about potential impacts, community vulnerability factors, equity. The attendees and the Project Team discussed feasible program ideas including support business resilience.

Overall, the workshop was highly rated with the morning sessions on new information and strategies receiving slightly higher ratings than the afternoon hands-on/ “how to” sessions. The form asked about intent to implement specific assessment or planning actions. A three-point scale was used to define “How likely you are to do, or support, each of the following activities in the next 12 months.” Attendees reported that they were “highly likely to do...” the following:

- 55% Hold meetings with stakeholder partners to discuss community vulnerability
- 45% Map and categorize potential impacts to vulnerable populations
- 41% Conduct internal meetings to discuss integrated vulnerability assessments
- 36% Review comp plan for compliance to Peril of Flood requirements
- 32% Map and categorize housing stock
- 23% Review housing and redevelopment plans to identify potential updates
- 18% Update plan elements that address affordable housing

Outcomes and Next steps

Several outcomes will be implemented post-grant.

1. **Engage the Florida Redevelopment Association (FRA):** As a result of his involvement in the POF CRA meetings, New Port Richey Councilman Altman engaged FRA director Carole Westmoreland who immediately included a new session based on this Project at their annual conference in Tampa on October 17-19. TBRPC will work with FRA to a develop survey for their members on resilience, prior to the Conference.
2. **New Pinellas County CRA Workgroup:** In May, the County formed a CRA working group comprised of CRA directors which will meet quarterly. Resiliency will be on the Sept. meeting agenda and TBRPC will support the County staff.
3. **Defining New Resilience Programs for CRAs:** The CRA coordinators quickly identified opportunities to support resilience improvement efforts among local businesses. The TBRPC will work with the CRAs develop program concepts.
4. **Increase Consistency in Housing Risk Categories.** The TBRPC, the USF School of Architecture and UF Shimberg Center for Housing Studies will begin to define a process to support consistent housing mapping and analysis.
5. **Partnership with UnitedWay Suncoast.** TBRPC and the United Way staff will meet in July to discuss partnership to on resilience planning efforts to better assess and address underlying, existing social and economic vulnerability conditions.

LESSONS LEARNED

Use of Housing Data in Vulnerability Assessments Needs a Vetted Process. Presenters and attendees at the workshop defined a clear need to convene experts to discuss housing data standardization, define appropriate risk-related housing construction parameters and review the county level data quality and management. In general, while housing was mapped, more work is needed to better support local and regional housing resilience vulnerability assessments. The issue was identified at the end of the day, after the three presenters had shown different age parameters to map housing stock. The attendees commented on the complexity and variability of housing data, and strongly indicated that other organizations and experts be engaged.

Engaging local CRA experts is crucial. The TBRPC staff invited Peter Altman, New Port Richey Councilman and TBRPC Council member to participate in the Project meetings because of his expertise in CRAs and finance. Altman is the sole elected official member on the Board of the Florida Redevelopment Association, serves on the New Port Richey CRA Board, and on the Steering Committee of the Tampa Bay Regional Resilience Coalition. Councilman Altman provided input on CRA challenges, planning processes, and participated in the two CRA meetings to facilitate discussions. Chris Moore, who oversees Pinellas County's CRA in Lealman, provided additional perspective and hosted in the new Lealman Community Center. Moore was instrumental in identifying and recruiting pertinent county staff to attend the meetings.

TASK 4: Manatee County Workshop *INCREASING COMMUNITY RESILIENCE*

OVERVIEW

The goal of this task was to conduct a workshop that focused on Manatee County constraints and opportunities. The Project team and Manatee County staff collaboratively planned and facilitated a 1-day workshop. Participants include staff responsible for community engagement, communications, finance, housing, CRAs, planning, operations and infrastructure, as well as elected and appointed officials from the County and Manatee municipalities, and members of the public.

Prior to the workshop, Team Manatee developed a locally-focused sea level rise mapping tool. Utilizing inundation modelling based on the resources available in the *Adaptation Planning Guide*, census data supplemented by data from the American Community Survey (ACS), and the County and available municipal Geographic Information Systems (GIS) local data layers, The Project Team and Manatee GIS staff collaborated in documenting the process used to develop the tool, so this process could be replicated by other local governments in the region and beyond. The process and the resulting SLR mapper and analyses were presented to the attendees at the one-day workshop in Manatee County on April 30 and at the June 14 workshop at the TBRPC.

The Manatee County staff recognized the benefit of adding SVI to the VA. This expanded VA will also improve compliance with the criteria of F.S. Section 163.3178(2)(f) enumerated by the Peril of Flood legislation for the required “redevelopment component” of the Comprehensive Plan Coastal Management Element.

SUMMARY

On April 30, 2019, the Project Team and Team Manatee hosted the workshop, *INCREASING COMMUNITY RESILIENCE: Discussions about new research, state requirements, and collaboration*, at the Bradenton Area Convention Center. Manatee County Commissioner Vanessa Baugh gave the welcome, Deputy Manatee County Administrator John Osborne gave a brief overview and update on County resilience initiatives. The Project Team introduced the project and Peril of Flood requirements. Libby Carnahan, UF/IFAS Sea Grant, presented the updated sea level rise projections developed by the Tampa Bay Climate Science Advisory Panel. This was the first public presentation of the updated data.

After the SLR presentation, The Project Team facilitated questions from the attendees and focused on identifying areas that are currently impacted by flooding, such as low service areas, or that experience repetitive flooding. Team Manatee collected notes from the discussion. The Project Team facilitated a discussion of recent and current local activities and efforts to implement Peril of Flood requirements. The County staff presentation of the Robinson Preserve Expansion project case study defined the process for the first natural area restoration project undertaken by Manatee County in which SLR was overtly considered in planning and design. The case study included a review of photos of actual changes to the habitats and described

considerations of the relative impacts of SLR between preserved open space and habitat restoration projects.

Products and Data Created by Manatee County

- a new inundation mapping tool Manatee County staff created using ESRI software. The tool depicts potential inundation in Manatee County for a projected 1 to 6 feet SLR above current Mean Higher High Water (MHHW) conditions.
- an Infrastructure Hot Spot Analysis showing at risk areas of infrastructure concentrations.
- social and economic analysis conducted for this Project, describing threats from SLR, utilizing data from the American Community Survey, esri Community Analyst, and supplemental analysis provided by the TBRPC.
- Infographics which visualize demographic, housing, and economic impacts from 1-6 feet SLR scenarios.

After the presentations the attendees separated into 11 tables for break-out group discussions. The draft Checklist and the TBRPC map of the mobile home parks throughout the region was provided and each table was asked to identify at-risk areas in their communities and discuss ideas for local government action. The results provided information for Manatee County staff and other represented local governments to consider when updating local plans for compliance with the Peril of Flood requirements. The ideas included:

- reduce impervious parking areas,
- increase open space,
- allow density transfer rights and/or clustering via development incentives for new development,
- create floodplain overlays and increase buffers in overlay areas,
- evaluate stormwater design standards and require green infrastructure,
- identify way to increase natural environment preservation,
- support local mitigation banks for wetlands and other natural areas,
- allow more preservation of Government-owned property,

The attendees also expressed a desire to increase collaboration among local government staff, externally and internally, and to engage in the TBRPC Resilience Coalition. Attendees volunteered to participate in technical activities, including the Gulf Coast GIS Users Group, a Comprehensive Plan Update Workgroup, and Resilience Coalition Partners.

LESSONS LEARNED

Developing Whole Organizational Support. Only a few director-level staff from Public Works, Utilities, and Property Management were present at the Workshop. Infrastructure that is maintained and services provided by these departments (current and future projects) are, and

will continue to be, most impacted by SLR inundation (including effects of salt-water intrusion). The attendees expressed a need for greater collaborative connections across multiple departments, suggested consideration of structural reorganization, such as establishing a staff entity dedicated to resilience initiatives and better cross-disciplinary integration.

RECOMMENDATIONS/NEXT STEPS.

Manatee County staff has organized internal meetings to disseminate the resulting information and define next steps. County staff is building on this Project to further the County's implementation of the Peril of Flood legislation in their Comprehensive Plan. The results are informing the County's PDRP update. The newly developed data is enhancing their VA, and was expanded to include environmental and socio-economic data and the SVI. That effort is projected to be completed in FYE 2020 and proceed in tandem with Peril of Flood implementation activities.

At the conclusion of Task 4, both the Project Team and Team Manatee noted that several of the VA tools identified in the *Adaptation Planning Guide* were more amenable to use than others. Team Manatee's preferred tools are identified in Appendix X.

CONCLUSIONS AND RECOMMENDATIONS

The Peril of Flood legislation and its mandate to coastal local governments to affirmatively amend their comprehensive plans to comply with its requirements has opened eyes and minds in the Tampa Bay Region to the exigent reality of a changing climate. While the requirements of the statute currently are *de minimus*, nothing in the statute limits a local government—or any regional council—from collaborating with the local governments of the region to better understand the challenges posed by changing climate and improving the resilience of the region.

More and more local governments are developing integrated sustainability and resilience plans, but in general more support is needed from senior level administrators and elected officials to encourage the integration of resilience objectives and metrics throughout plans, programs and budgets. This ideally would include inclusion of metrics in every department, and the involvement of human resources departments to better define roles, responsibilities and metrics to effectively measure how resilience practices are being implemented. Resilience is similar to good fiscal governance: it must be embedded in all levels, departments and programs. It cannot be a separate project, or led by one person.

We agree with the Institute for Sustainable Communities that, “[b]ound together by a shared focus on place, Regional Climate Collaboratives are harnessing the power of networks to build resilience to climate impacts and, in some cases, to reduce the emissions driving those impacts.”¹

In conducting this Project, the Project Team engaged a broad spectrum of local government representatives—some citizens, some elected officials, and numerous staff members in varying positions of responsibility across multiple department disciplines. Through this process, we repeatedly observed that local government staff in the Tampa Bay region understand that changing climate brings existential challenges, whatever their position of authority or responsibility. Citizens, appointed boards, and elected officials are also seeking out education to better understand their role.

We conclude that the public, and the public fora that engage the region’s varied citizen population, is the next frontier in effective implementation of the Peril of Flood legislation. The opportunities this legislative direction provides for “education through implementation” are currently limitless, and the public information such education provides can better prepare the community for the coming storms.

We are grateful to all our collaborators and partners in mobilizing this effort, and particularly to the Florida Resilient Coastlines Program in the Florida Coastal Office of DEP and their grantors for their leadership in this immense area of endeavor generally. Thank you.

PROJECT RESOURCES

Tampa Bay Regional Planning Council

Workshop Presentations and other resources:

<http://www.tbrpc.org/peril-of-flood-workshops/>

Manatee County Climate Portal

<https://www.mymanatee.org/gisportal/apps/sites/#/mc-climate-adaptation.>

inundation mapping tool:

<https://www.mymanatee.org/gisportal/apps/MapSeries/index.html?appid=a3738b09236c4b00b91136daef27d208.>

Infrastructure impacts hotspot analysis:

<https://www.mymanatee.org/gisportal/apps/View/index.html?appid=57346603fdd849098dbd4b0a9760f8f1.>
