

# COLLABORATIVE PLANNING FOR SEA LEVEL RISE IN THE TAMPA BAY REGION

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## Introduction

Coastal communities surrounding Tampa Bay, including Tampa, St. Petersburg, Clearwater, and Bradenton, are low-lying and densely-populated.

### By the Numbers

- 700 miles of coastline
- 3.2 million residents
- \$170 billion regional economy
- \$51 billion influenced by bay<sup>1</sup>
- Diverse cultural and natural resources

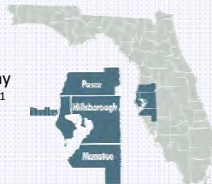


Figure 1. Map of Florida highlighting Tampa Bay region

The region is highly susceptible to the effects of climate change and associated sea-level rise (SLR). A 2013 World Bank report<sup>2</sup> cited Tampa/St. Petersburg as the seventh most vulnerable urban region in the world, assuming it chooses not to implement adaptation strategies in response to SLR. Likewise, the 3rd National Climate Assessment (2014) identified Tampa Bay as one of three particularly vulnerable regions in Florida.

In 2014, local governments began to seek regional guidance related to SLR adaptation planning options. In response to requests, Florida Sea Grant and the Tampa Bay Regional Planning Council (TBRPC) initiated coordinated facilitated efforts to address adaptation planning in the four county area.



Figure 2. (a) Infrastructure at Risk-Belcher Road, Pinellas (b) Planning Consultations (c) Street flooding in St. Petersburg caused by saltwater infiltrating stormwater system

## Methods

### Climate Science Advisory Panel (CSAP)

- ❖ Facilitator-UF/IFAS Extension, Florida Sea Grant
- ❖ Membership- Scientists
  - ❖ Federal Agencies
  - ❖ Universities & Academic Consortia
  - ❖ Local & Regional Governments
- ❖ Objective- *Collaboratively develop recommendations for local governments and regional agencies as they make decisions about responding to climate change and SLR.*

### CSAP Timeline of Activities

Date	Action Item
January 2014	Sea Level Rise Project Inventory
April 2014-	CSAP Formed, Monthly Meetings Commenced
August 2015	• Expert Speakers, Literature Review, Facilitated Discussion
May 2014- Oct 2015	Planning & Science Updates to TBRPC ONE BAY Resilient Communities Working Group
February – August 2015	“Soft Roll Out” Presentations to Manatee Directors, Environmental Protection Commission of Hillsborough Climate Group, City of Tampa, Manatee Council of Governments
September 2015	Published “Recommended Projection of Sea-Level Rise in the Tampa Bay Region” [SLR Recommendation]
October 2015	SLR Recommendation accepted by Tampa Bay Regional Planning Council for distribution to local governments
Oct 2015-Present	Public Outreach of SLR Recommendation

### ONE BAY Resilient Communities Working Group

- ❖ Facilitator- Tampa Bay Regional Planning Council
- ❖ Membership- Practitioners
  - ❖ Policy Makers
  - ❖ Municipal & County Planners
  - ❖ Emergency & Floodplain Managers
- ❖ Objective- *Improve the regional capacity of the area to withstand uncertainty and adverse impacts associated with sea level rise and other coastal hazards.*

### ONE BAY Timeline of Activities

When	Action Item
Winter 2014	Requests from local governments for SLR coordination
April 2014	Apply for NOAA Crest Grant to facilitate regional SLR planning efforts (supported by 4 counties, various regional entities and the cities of Tampa, Clearwater and St. Petersburg)
June 2014	Awarded NOAA Crest Grant (2 year term)
May 2014- Present	Quarterly meetings of ONE BAY Resilient Communities Working Group <ul style="list-style-type: none"> <li>• Invited speakers highlighted case studies and success stories assessing vulnerability and planning for SLR</li> <li>• Conducted informal needs assessment of local governments</li> </ul>

## Sea Level Rise Recommendation

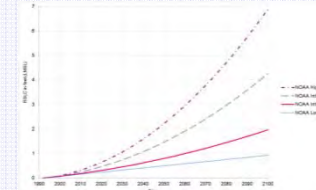


Figure 3. Graphic Relative Sea Level Change (RSLC) Scenarios for St. Petersburg, Florida, as calculated using the NOAA projections and regional corrections. (USACE, 2015)

- Adaptation planning should employ a scenario-based approach that considers, at minimum, location, time horizon, risk tolerance.
- Projections of SLR should be consistent with present and future National Climate Assessment (NOAA) estimates and methods.
- Projections of SLR should be regionally corrected using the St. Petersburg tide gauge data.

## Results & Conclusions

- The CSAP published “Recommended Projection of Sea-Level Rise in the Tampa Bay Region”
- ONE BAY has published a website that serves as a clearinghouse for regionally-relevant SLR resources.
- ONE BAY partnered with the Department of Homeland Security to develop a tool simulating the decision-making process for critical infrastructure resilience
- The CSAP and ONE BAY groups are working in tandem to establish the positive feedback loops between researchers and practitioners that promote the pragmatic application of scientific data in public policy.

## References

- <sup>1</sup>Tampa Bay Regional Planning Council Economic Analysis Program. 2014. Economic Valuation of Tampa Bay. [http://www.tbrpc.org/eap/pdfs/Economic\\_Valuation\\_of\\_Tampa\\_Bay\\_Estuary\\_July2014.pdf](http://www.tbrpc.org/eap/pdfs/Economic_Valuation_of_Tampa_Bay_Estuary_July2014.pdf)
- <sup>2</sup>Hallegatte, S., C. Green, R. J. Nicholls, and J. Corfee-Morlot. 2013. Future flood losses in major coastal cities. *Nature Climate Change*. v3. p 802-806
- <sup>3</sup>U.S. Army Corps of Engineers. 2015. *Online Sea Level Change Calculator*. <http://www.corpsclimate.us/ccacescurves.cfm>.

## Contact

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