

PLANNING FOR FLORIDA'S COASTAL FUTURE:

NOW OR LATER?

Why Plan?

29% 
Of the national population inhabits coastal counties.¹



Coastal counties' contribution to annual GDP.¹

45%

U.S. Atlantic coastlines have a wide variety of uses, from complex urban areas like Miami and New York, to hundreds of smaller coastal cities, to undeveloped parks and recreation areas.

Coastal counties include **5 out of the 10** largest cities in the U.S.¹

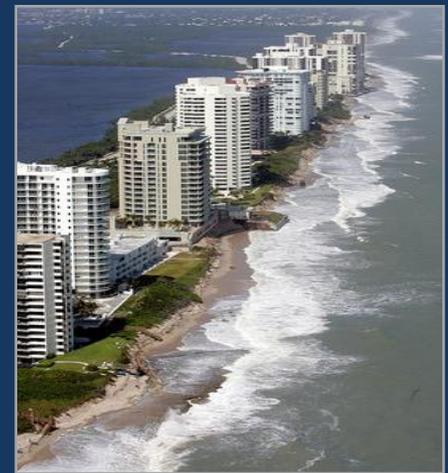


Low elevation areas experience flooding and storm surge events that are becoming more common and expensive.²

How can we plan for our coastal future?

With science-based adaptation planning.

Proactive planning and risk management makes sense for citizens, governments, and businesses.



Singer Island, Florida

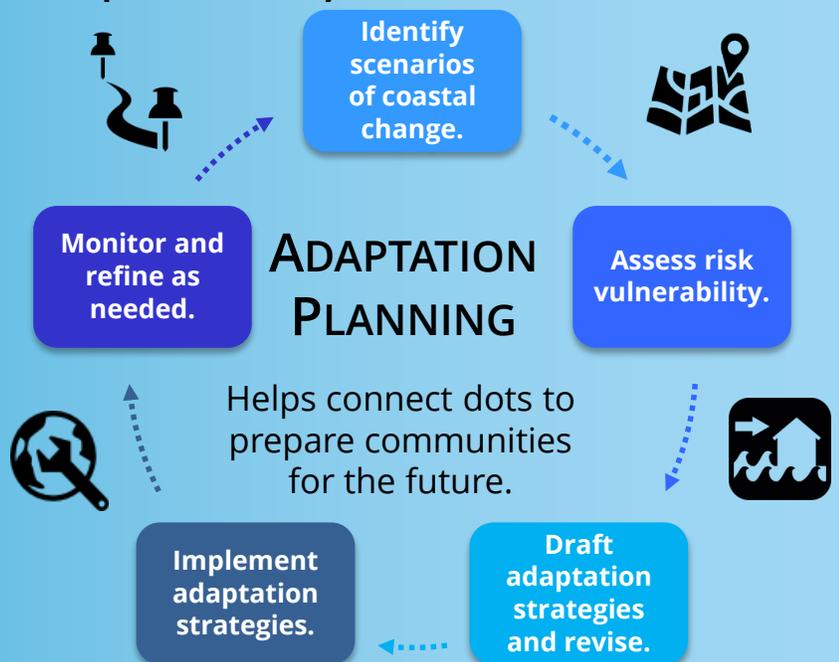
WHAT IS COASTAL ADAPTATION PLANNING?

Adaptation planning is using coastal management tools to develop long term plans to *improve resilience*.

Adaptation planning is a flexible process in which citizens and agencies:

- Assess vulnerabilities to coastal change and identify resilient options
- Plan and implement responses
- Modify as needed based on results

Planning is fundamental to managing risk in systems that change rapidly, like coastlines, the most dynamic part of the earth's crust.



GOOD GOVERNMENT IS PROACTIVE: COASTAL ADAPTATION PLANNING

Local Adaptation in Action

The City of Punta Gorda in Southwest Florida is implementing adaptation planning based on citizen participation with regional, state and federal partners. This includes diverse land use planning actions and a living shoreline program. More information is at the web site of the [Southwest Florida Regional Planning Council](#).



Hundreds of American cities and counties are actively planning for coastal change.

Many cities apply science and web based planning resources including:

- [NOAA's Digital Coast](#)
- [Georgetown Climate Center](#)
- [Virtual Climate Adaptation Library](#)
- [Surging Seas](#)
- [Ecosystem Based Management Tools](#)
- [Climate Adapt. Knowledge Exchange](#)



BEST PRACTICES FOR ADAPTATION:

There are **over 1800 reports and guidelines** on science based adaptation planning around the world, with over **700** in the United States alone.³

Planning Based Tools:

- Comprehensive Planning Documents
- Conservation and Rolling Easements
- Living Shorelines
- Zoning and Overlay Zones
- Building Codes with Resilient Design
- Setbacks/Buffers

Market Based Tools:

- Community Rating Systems
- Capital Improvement Programs
- Acquisitions and Buyout
- Development Incentives
- Coastal Real Estate Disclosures
- Transferable Development Rights

(Adapted from [Georgetown Climate Center, 2011](#))

This document with links is online at: t.fit.edu/fl-infographic



SCIENCE-BASED SCENARIOS FOR COASTAL CHANGE

Published science overwhelmingly suggests that the effects of coastal climate change will increase in coming decades.^{4,5,6}

In Florida, it is very likely that **sea-level rise** in the 20th century occurred **faster** than any century in the last 2600 years.⁶

Coastal areas will likely see 1-2 feet of sea level rise in approximately 50 years.⁷



CLIMATOLOGY



OCEANOGRAPHY



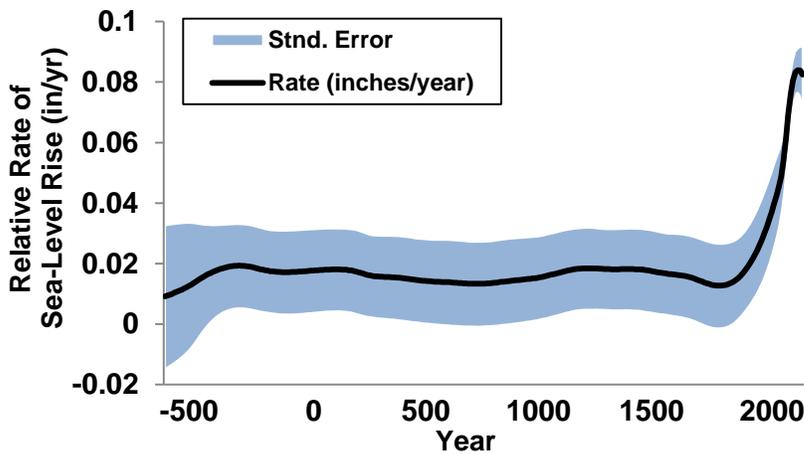
GEOLOGY

Data from NASA's and NOAA's climate websites reinforce the scientific consensus that rising global temperatures are increasing sea-level rise in most regions by melting land ice (thousands of glaciers and areas like Greenland and Antarctica), along with many other factors.^{5,7}

www.climate.nasa.gov
www.climate.gov



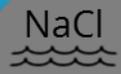
HISTORICAL CHANGE IN RATE OF SEA LEVEL OVER THE LAST 2600 YEARS IN NORTHEAST FLORIDA⁶



Along with sea level, other threats will amplify including:



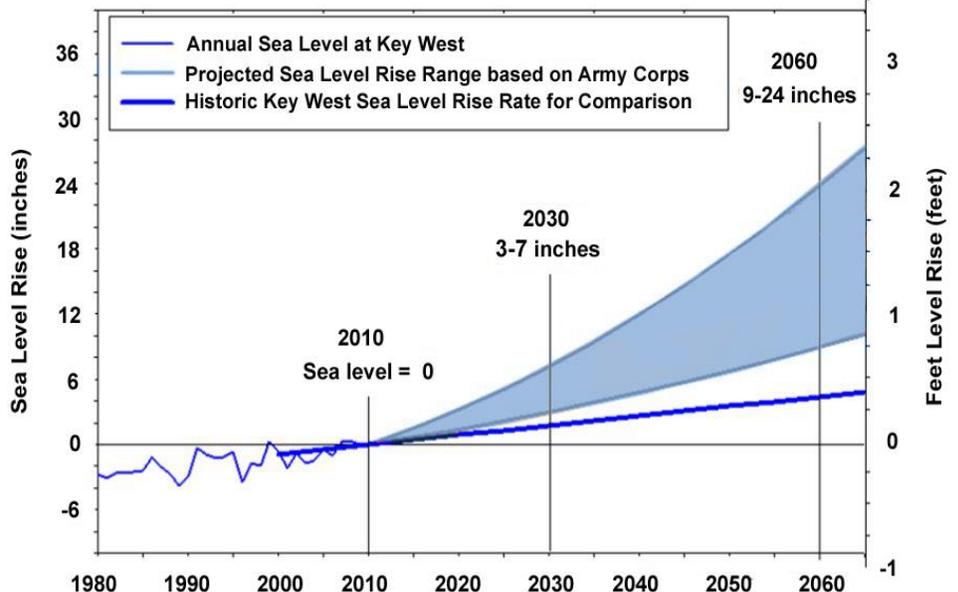
Ocean acidification



Salt water intrusion

Proactive coastal planning and CO₂ reductions can help lessen impacts over the long term.^{5,7}

SEA LEVEL RISE IN SOUTH FLORIDA⁴

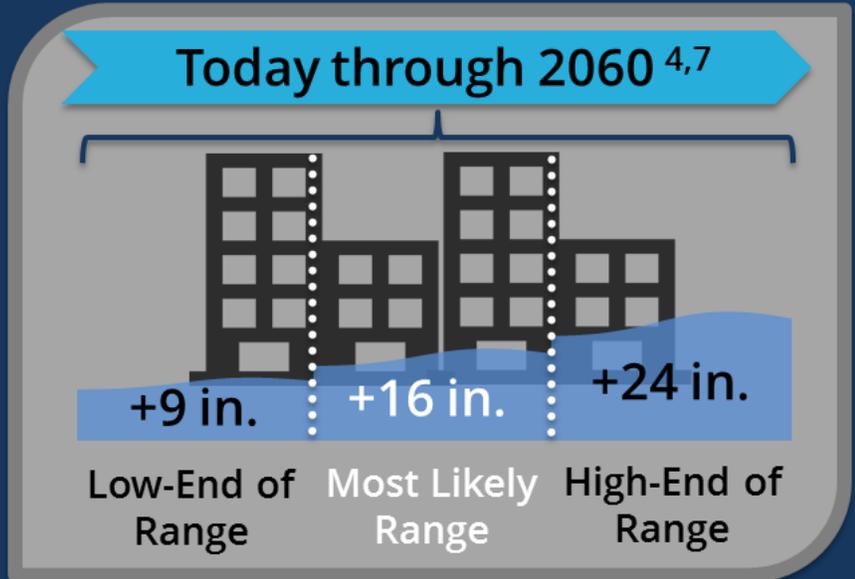


ALTERNATIVES FOR THE FUTURE

Sea-level rise is increasing.^{4,6,7}
Our grandchildren will deal with the decisions we make now.



Without science-based planning, challenges to life and property can be amplified.



CHANGE HAPPENS... PLANNING HELPS

- Planning to address impacts is fiscally responsible.
- Unplanned responses to flooding increase taxpayer costs.
- Public, federal, and state flood insurance can be available at rates that do not reflect the long-term risks.
- Ensuring subsidies and markets accurately reflect long-term risk advances resilience and is fiscally responsible for governments.⁸



“Sunny day flooding” is becoming more common in South Florida. Science based planning can reduce many risks.

LITERATURE CITED

- 1 Wilson & Fischetti. 2010. Coastline population trends in the U.S. *NOAA Rept.*
- 2 Strauss et al. 2012. *Environ. Res. Letters.*
- 3 [Virtual Climate Adaptation Library](#); [Climate Adapt. Knowledge Exchange](#)
- 4 [S. Fl. Regional Climate Compact. 2011.](#) Unified SLR projection for SE Florida.
- 5 [Intergovernmental Panel on Climate Change](#) 2013 & 2014. *5th Assess. Rept.*
- 6 [Kemp, A.C. et al. 2014. Mar. Geology.](#)
- 7 [National Climate Assessment. 2014.](#)
- 8 [SmarterSafer.org](#) - Americans for Smart Natural Catastrophe Policy

This document with all links is online at: t.fit.edu/fl-infographic

INFOGRAPHIC DESIGN: J. HANDLOFF



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