

Sea Level Rise: New, Certain, and Everywhere.

What to do in response?

→ Online at:
erf.org

Selling SLR to local governments on the St. Johns River



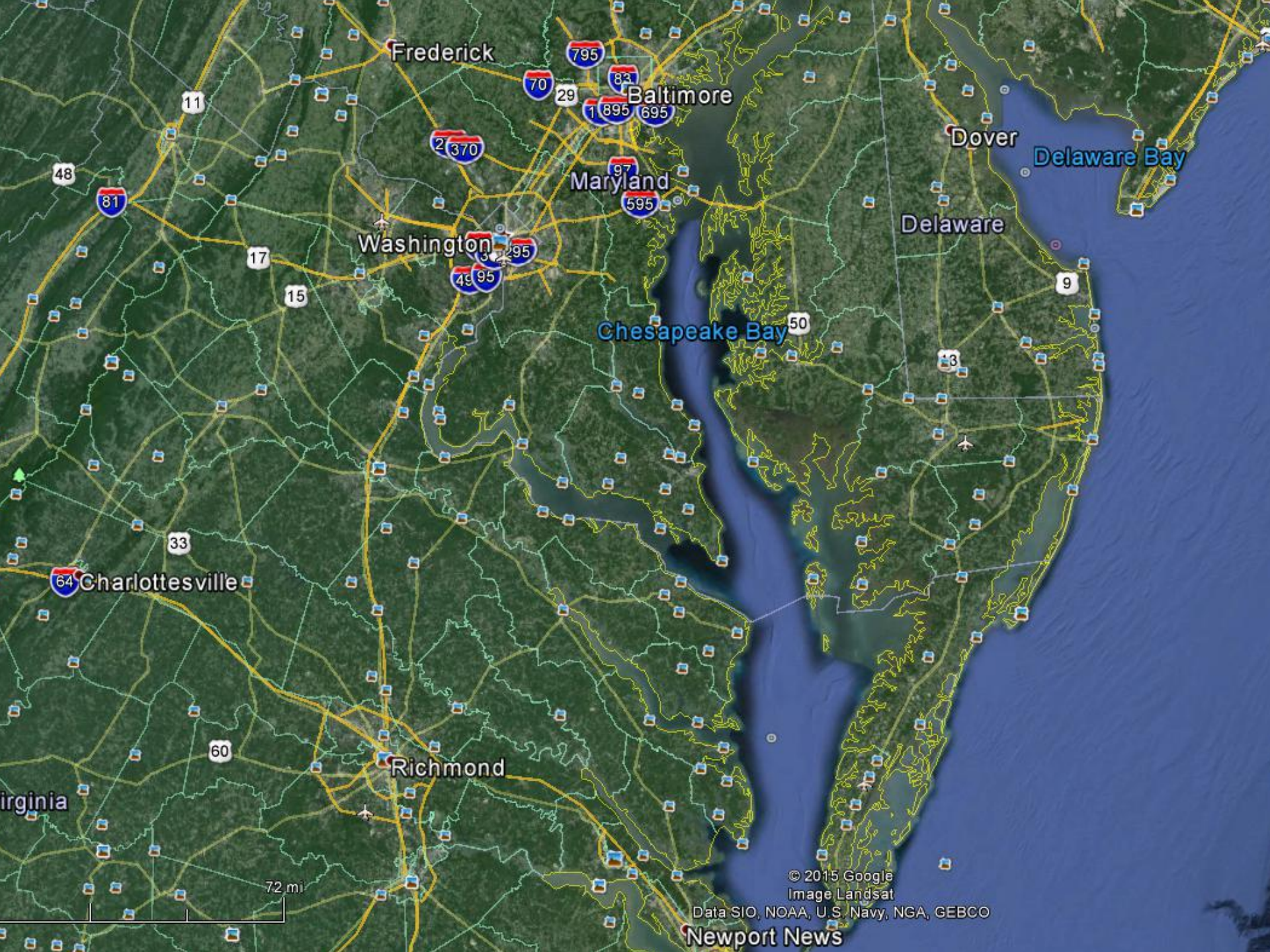
by
Robert Virnstein
Seagrass Ecosystems Analysts
and
FAU Harbor Branch



- ✓ **Sea level is rising, including the Lower St. Johns River.**
- ✓ **The rate of sea level rise is increasing.**
- ✓ **Expect >1 foot by 2050, >3 feet by end of century (projection).**
- ✓ **There will be impacts. Some are scary.**
- ✓ **Planning must incorporate this impending rise.**

A polar bear is shown standing on a small, isolated piece of white ice that is partially submerged in dark blue water. The bear is looking towards the left of the frame. The water shows some ripples and a small splash near the base of the ice floe. A large, red, semi-transparent watermark is overlaid across the center of the image.

Not this



Frederick

Baltimore

Dover

Delaware Bay

Maryland

Delaware

Washington

Chesapeake Bay

Charlottesville

Richmond

Virginia

72 mi

© 2015 Google
Image Landsat

Data SIO, NOAA, U.S. Navy, NGA, GEBCO

Newport News



Senator Marco Rubio (R, FL)

“I do not believe that human activity is causing these dramatic changes to our climate the way these scientists are portraying.”



Published a book in 2012 titled “The Greatest Hoax: How the Global Warming Conspiracy Threatens Your Future”

**Senator James Inhofe (R-Okla.),
chairman of the Senate Environment
and Public Works Committee**

**70% of Republicans in the Senate and
53% of Republicans in the House
deny the existence of human-caused
global warming.***

*Center for American Progress Action Fund (2015)

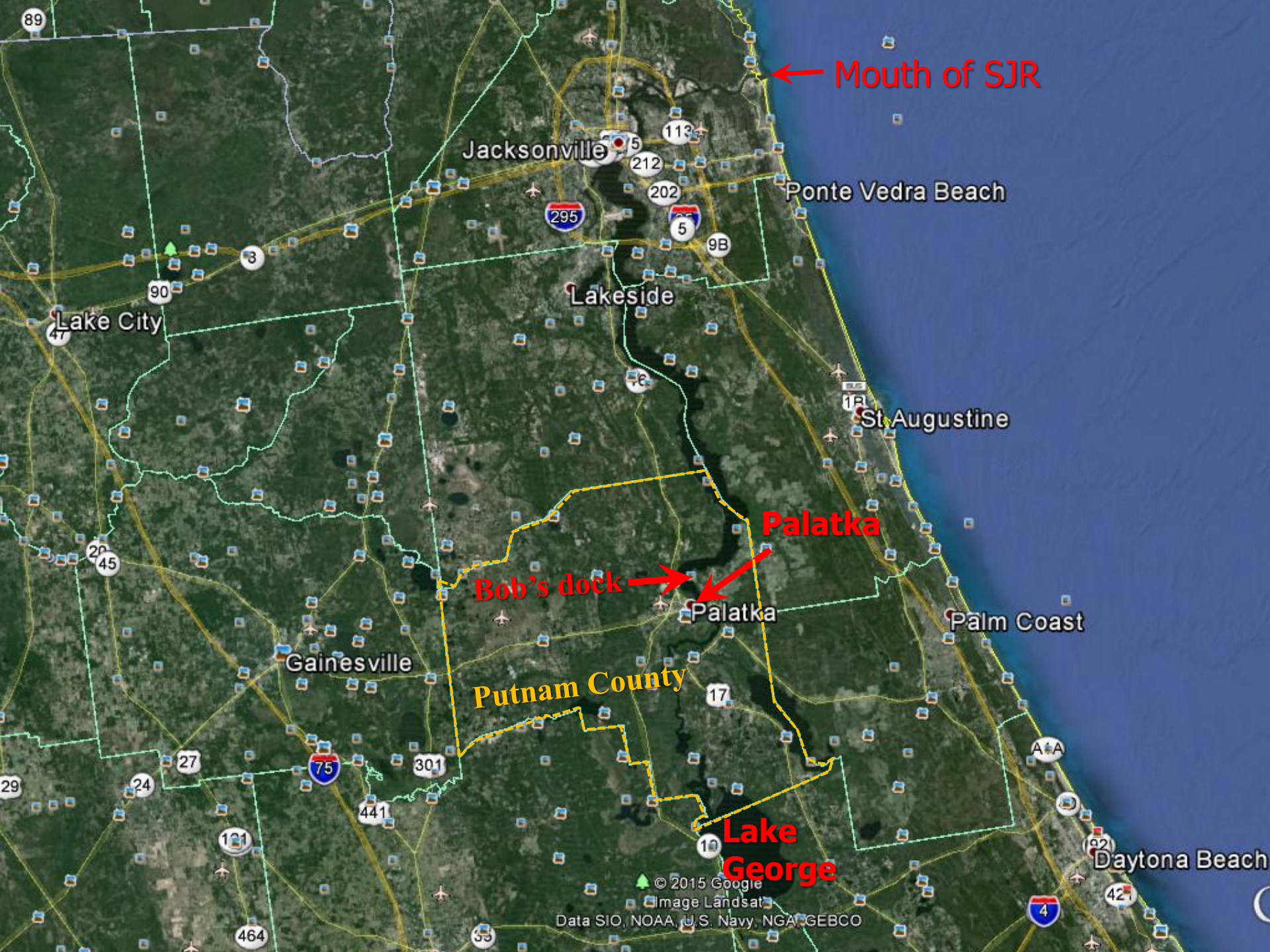


Mouth of SJR

Lake George

Headwaters of SJR

You are here



← Mouth of SJR

Jacksonville

Ponte Vedra Beach

Lakeside

Lake City

St. Augustine

Palatka

Bob's dock →

Palatka

Palm Coast

Gainesville

Putnam County

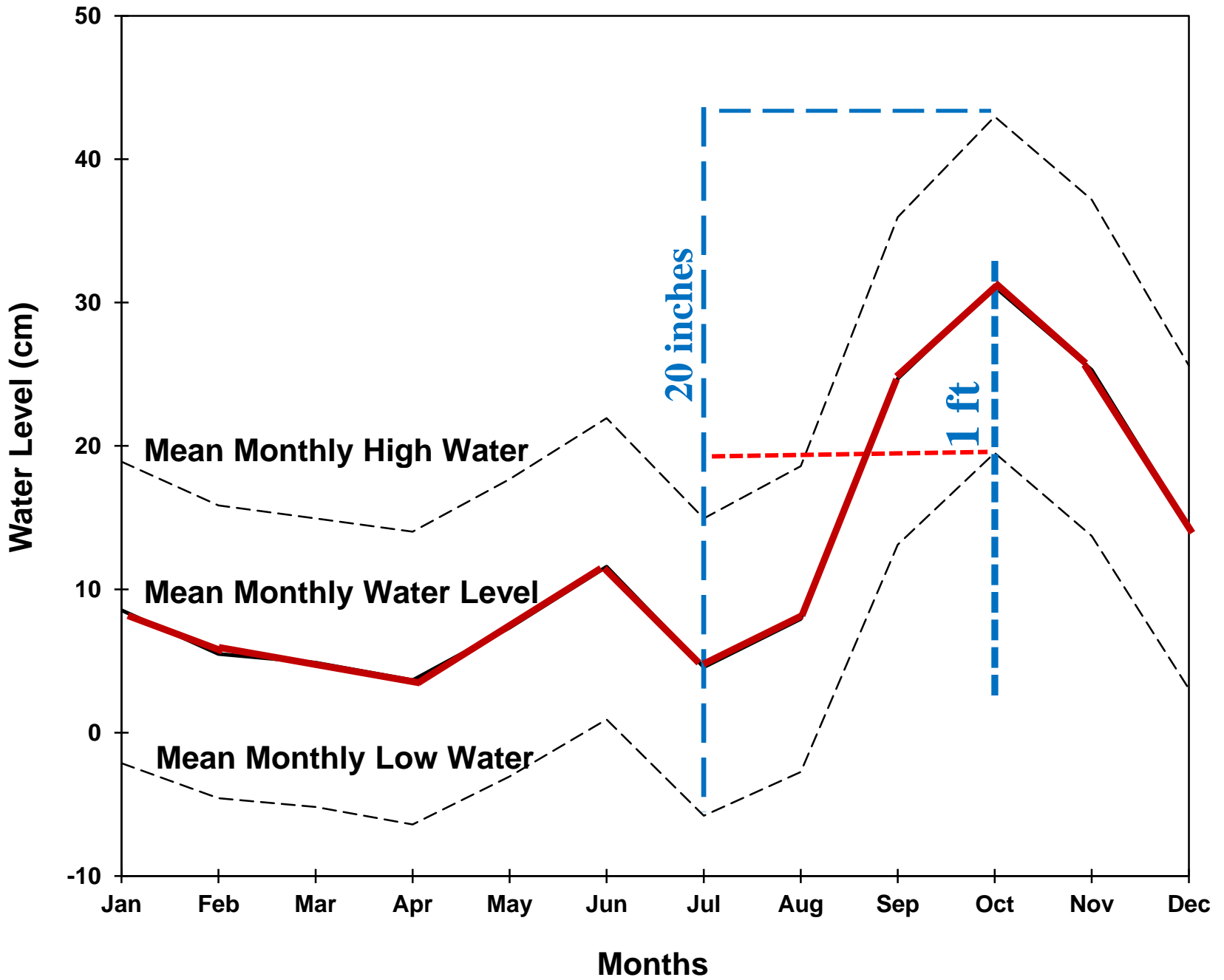
Lake George

Daytona Beach

Two facts:

The St. Johns River at Palatka is at sea level.

Ocean water level, not rainfall, is what drives the level of the River.





East Palatka boat ramp, Pico Road, November 14, 2013



East Palatka boat ramp, Pico Road, October 7, 2015



East Palatka boat ramp, Pico Road, October 8, 2015

CREEK IS RISING



Photo by CHRIS DEWITT/Palaska Daily News
Linda Woodham walks Thursday afternoon in a flooded entryway at her Sabsuma home on Smith Lane near Dunns Creek.

Rising St. Johns River causes water damage in homes near Dunns Creek

10/9/15



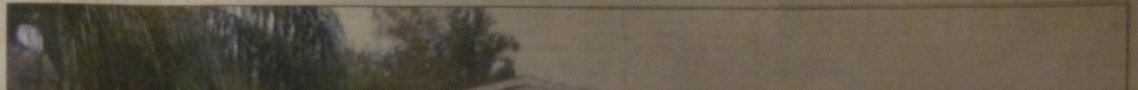
Linda Woodham walks Thursday afternoon in a flooded entryway at her Satsuma home on Smith Lane near Dunns Creek.

Photos by CHRIS DEVITTO/Palaska Daily News

Creek

CONTINUED FROM PAGE 1A

"(The weather) was the same thing," Laibl said. "There are low sea walls in that area and property is low, so people get



RISING SEAS

Sea level didn't change much for nearly 2,000 years. It began to rise in the late 19th century.

The great unknown: the future of the ice sheets.

NOAA's four scenarios, shown here, span a large range of possibilities for 2100.

The sea will keep rising after that.

SEA-LEVEL SCENARIOS, 2100

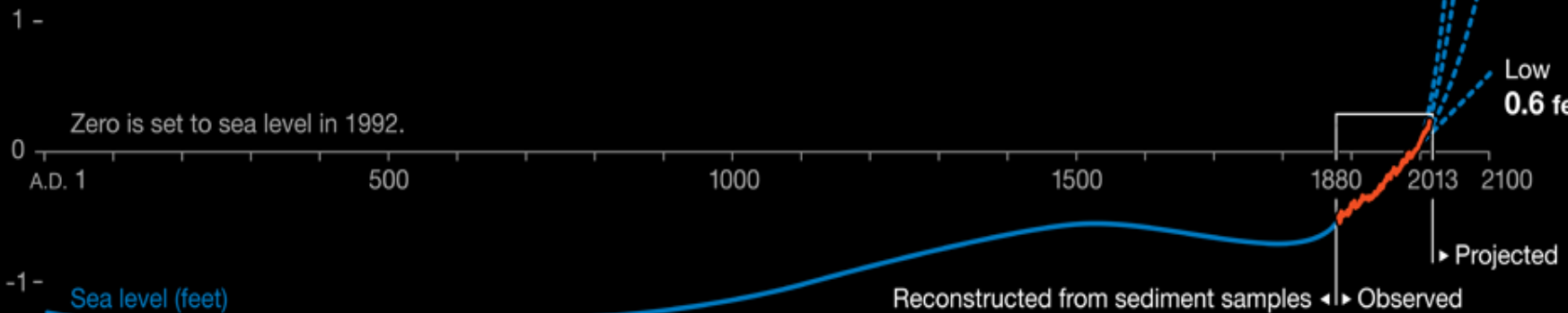
High
6.6 feet

Intermediate high
4.0 feet

Intermediate low
1.7 feet

Low
0.6 feet

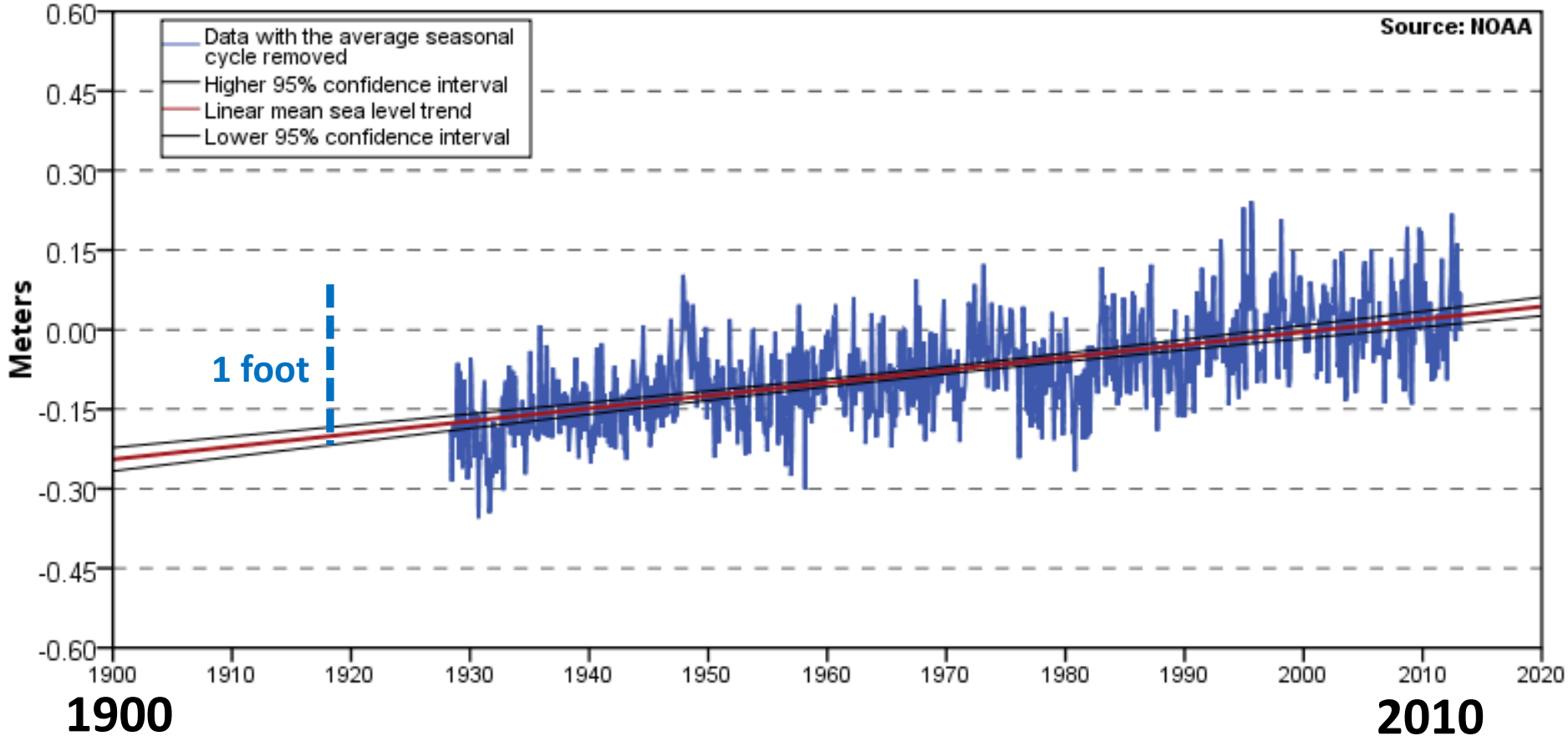
Projected



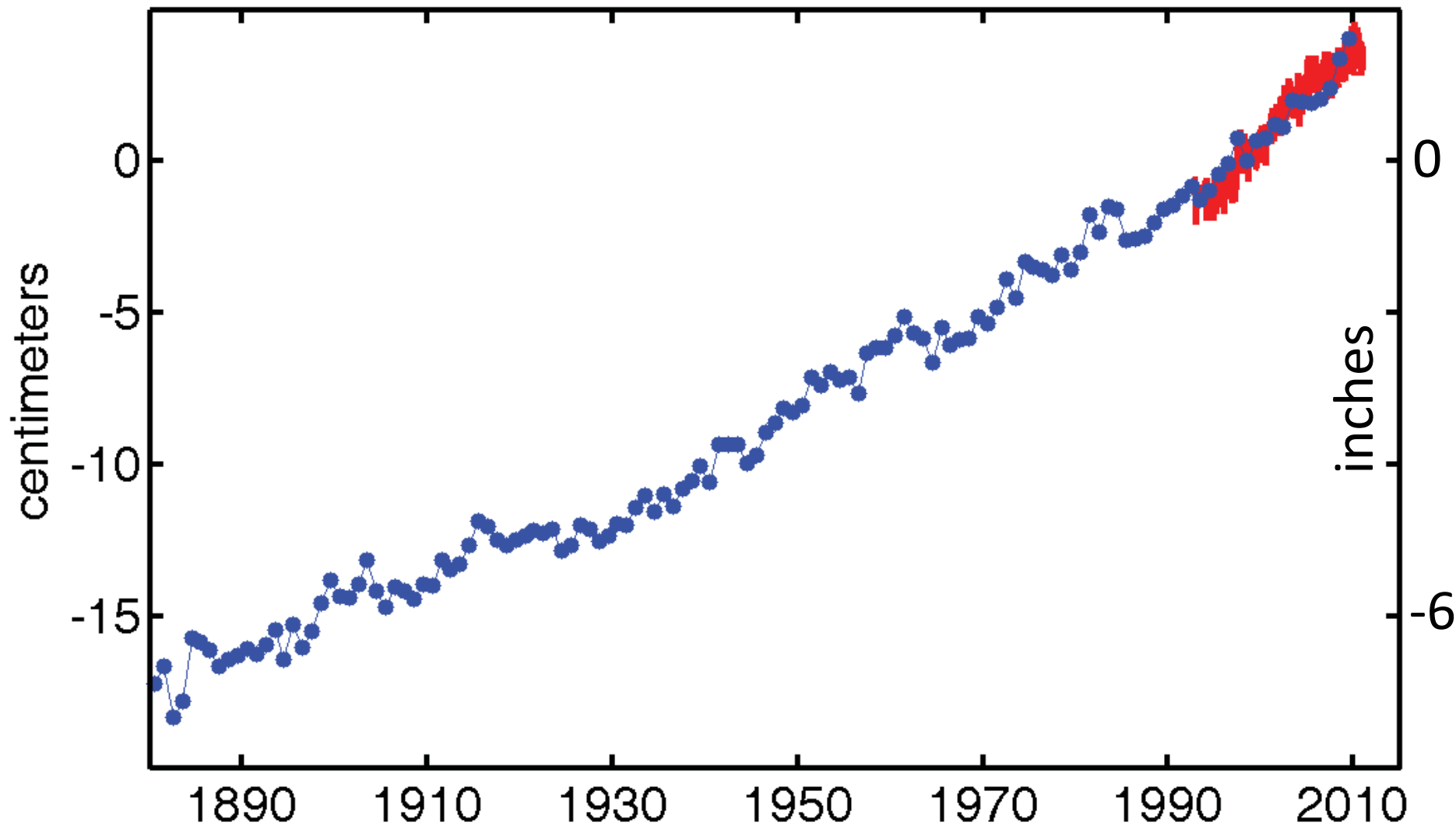
Mean Sea Level Trend, Mayport, FL, 1928-2012

Mayport / Bar Pilots Dock, FL

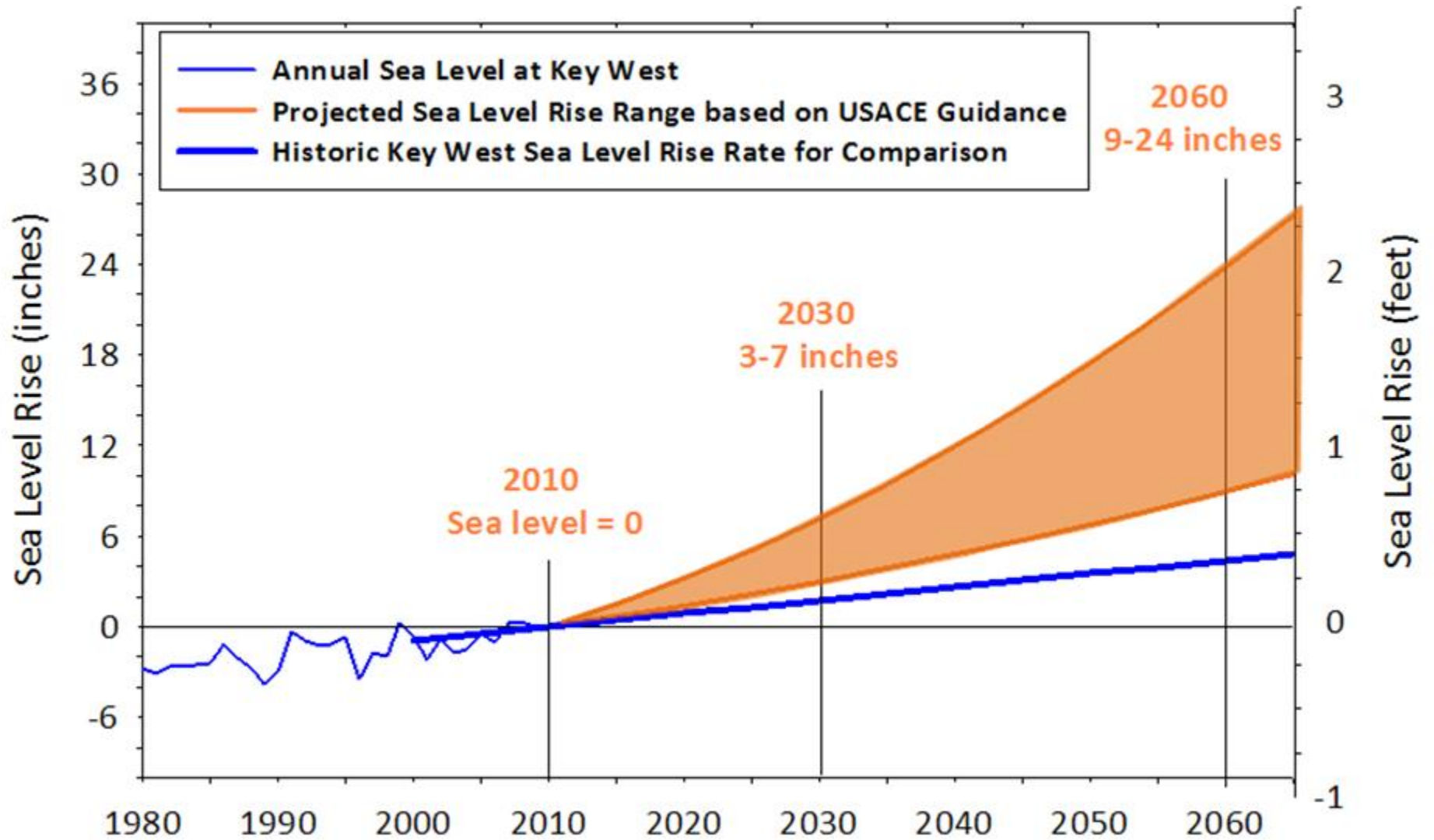
2.40 +/- 0.31 mm/yr = **1 inch/decade**



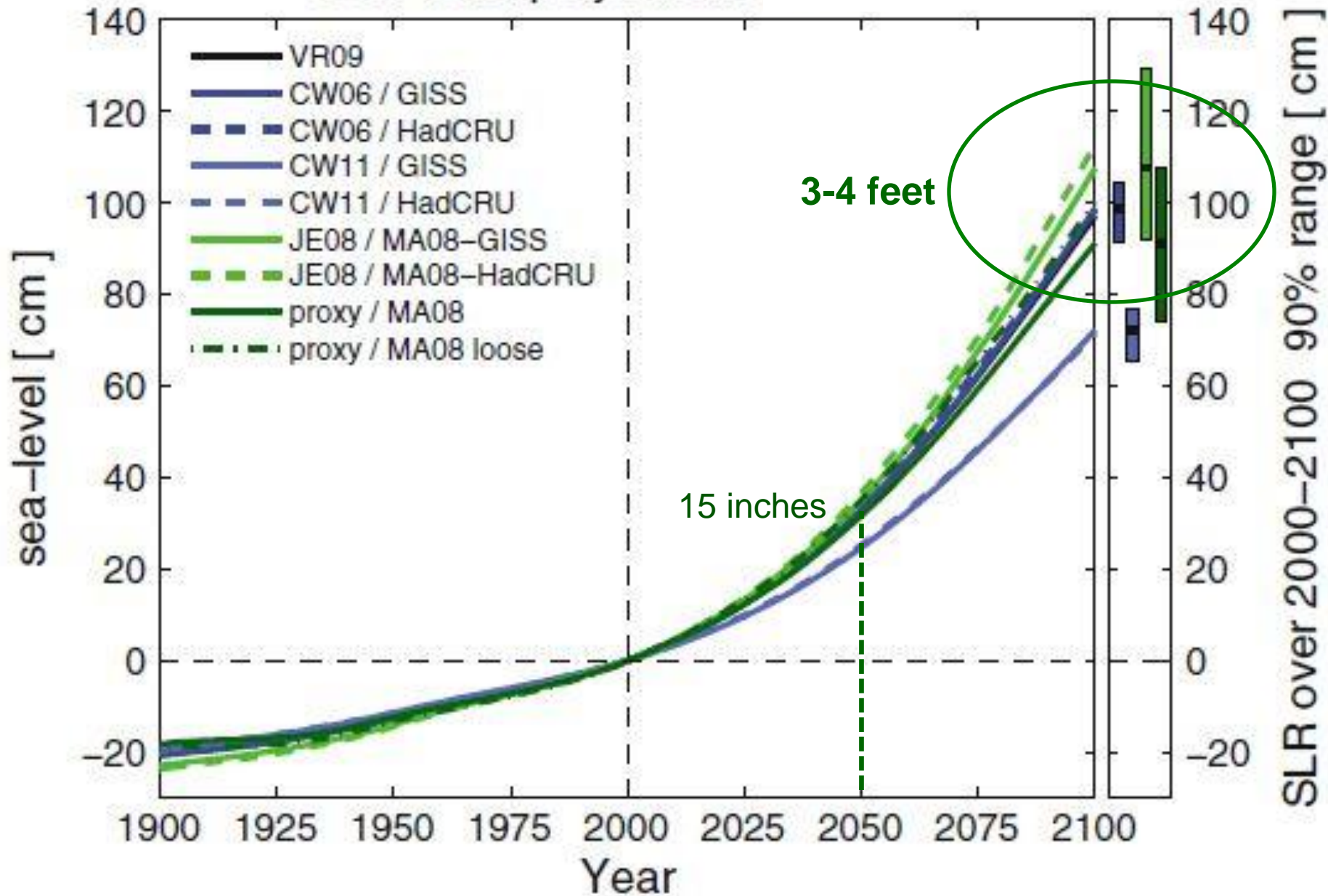
Global mean sea level based on tide gauges (blue)
and satellite altimetry (red)

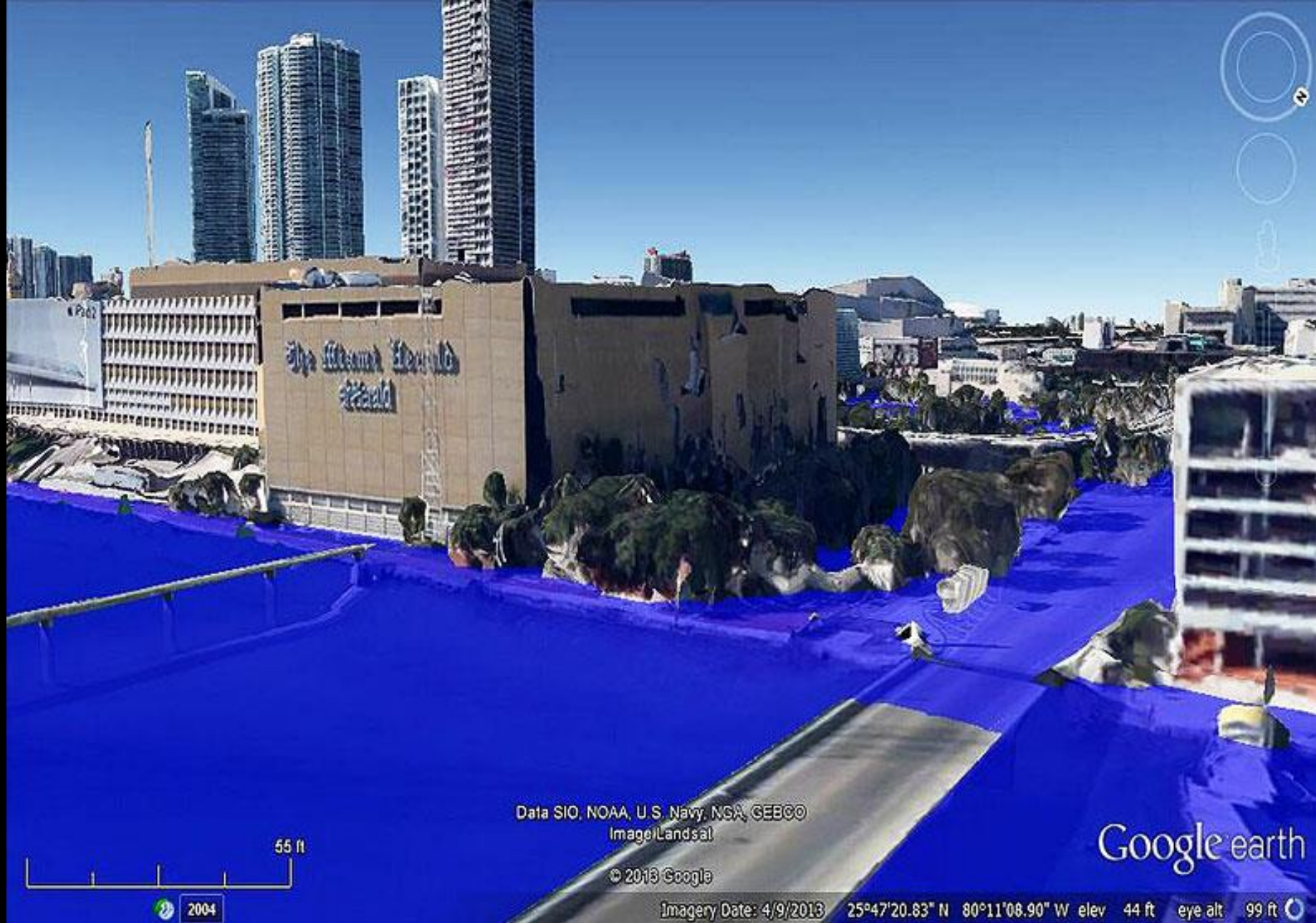


Southeast Florida Regional Climate Change Compact, 2011

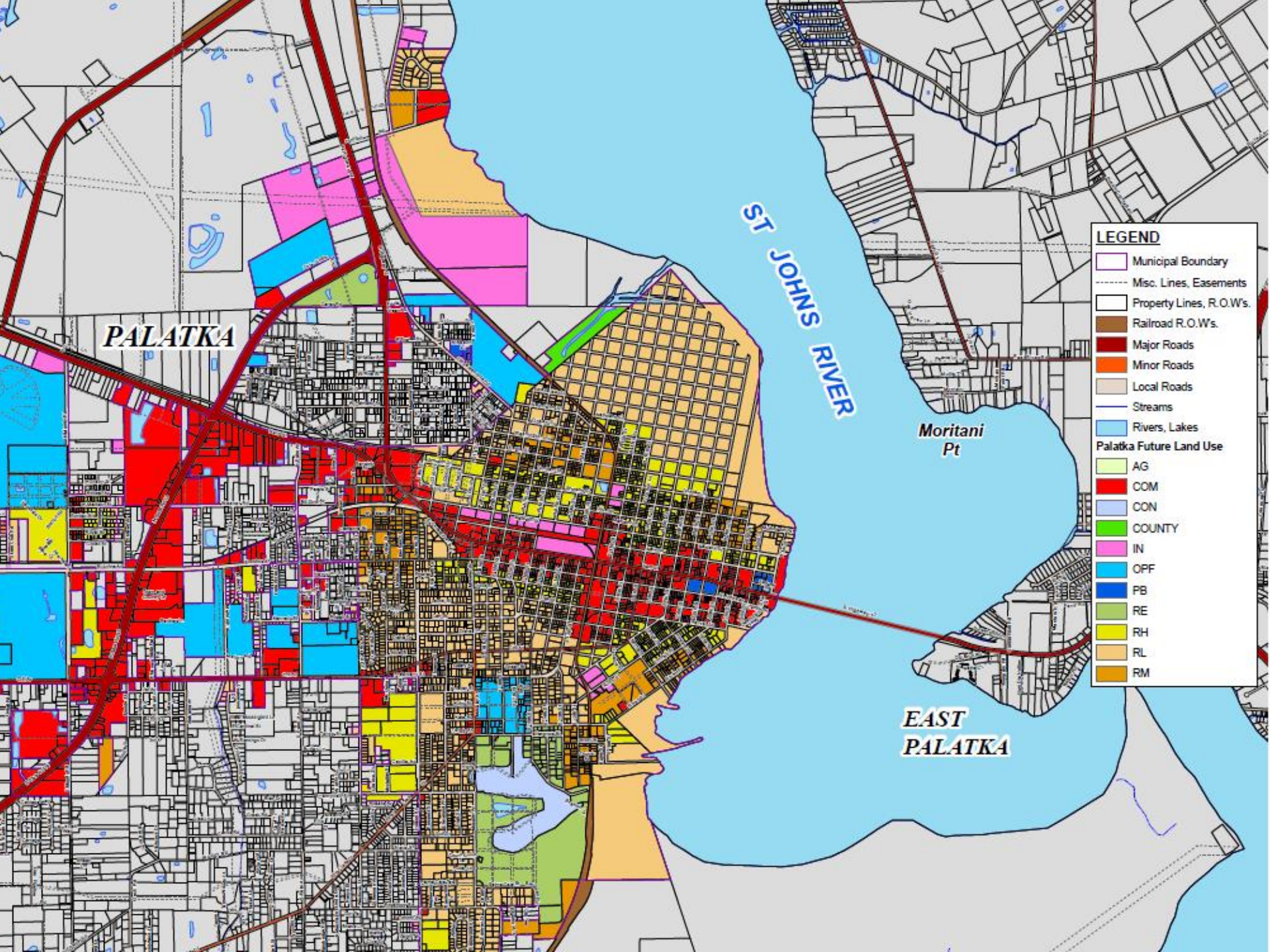


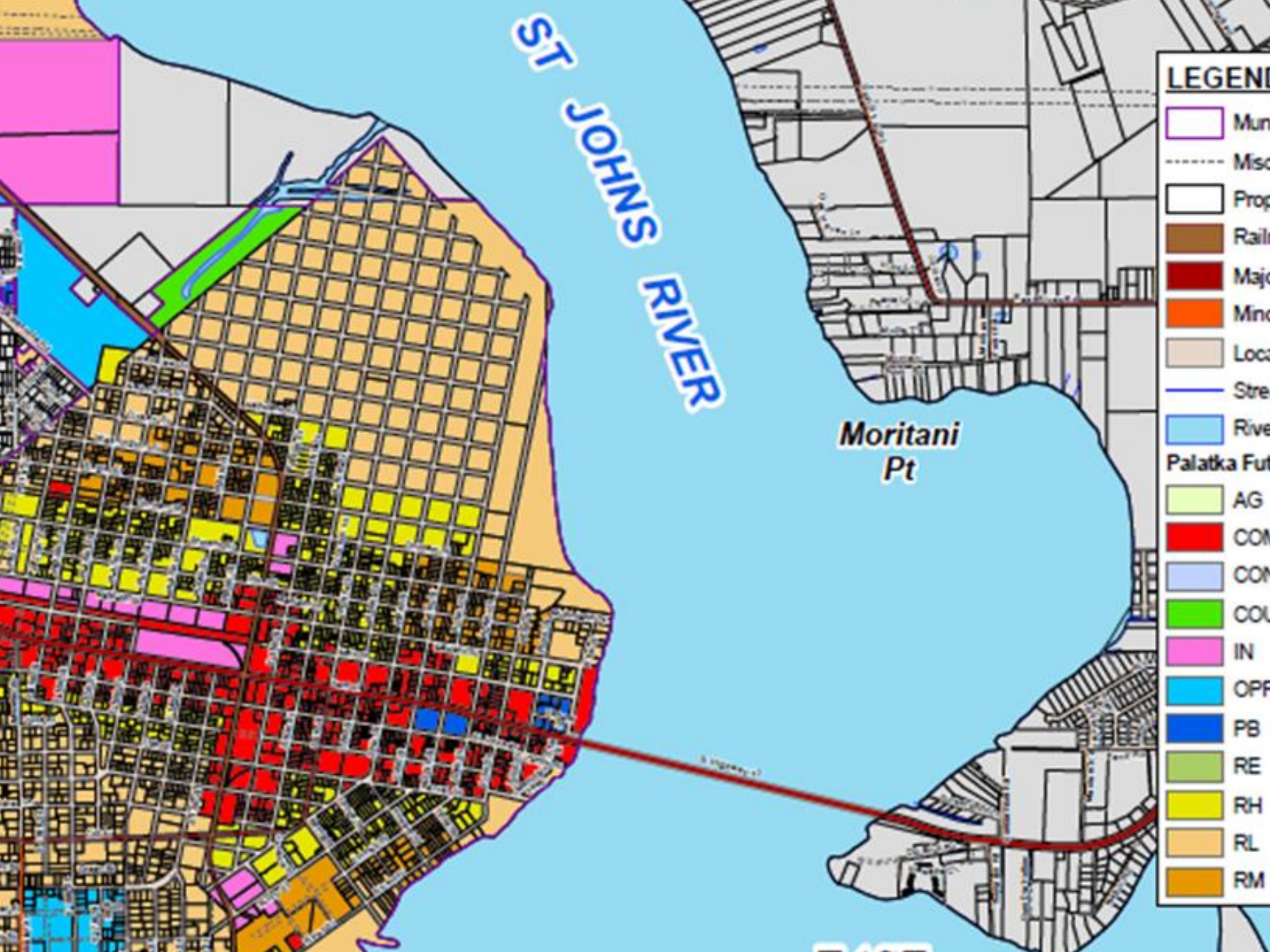
Sea-level projections





Miami, with 1 meter (3 feet) of sea level rise

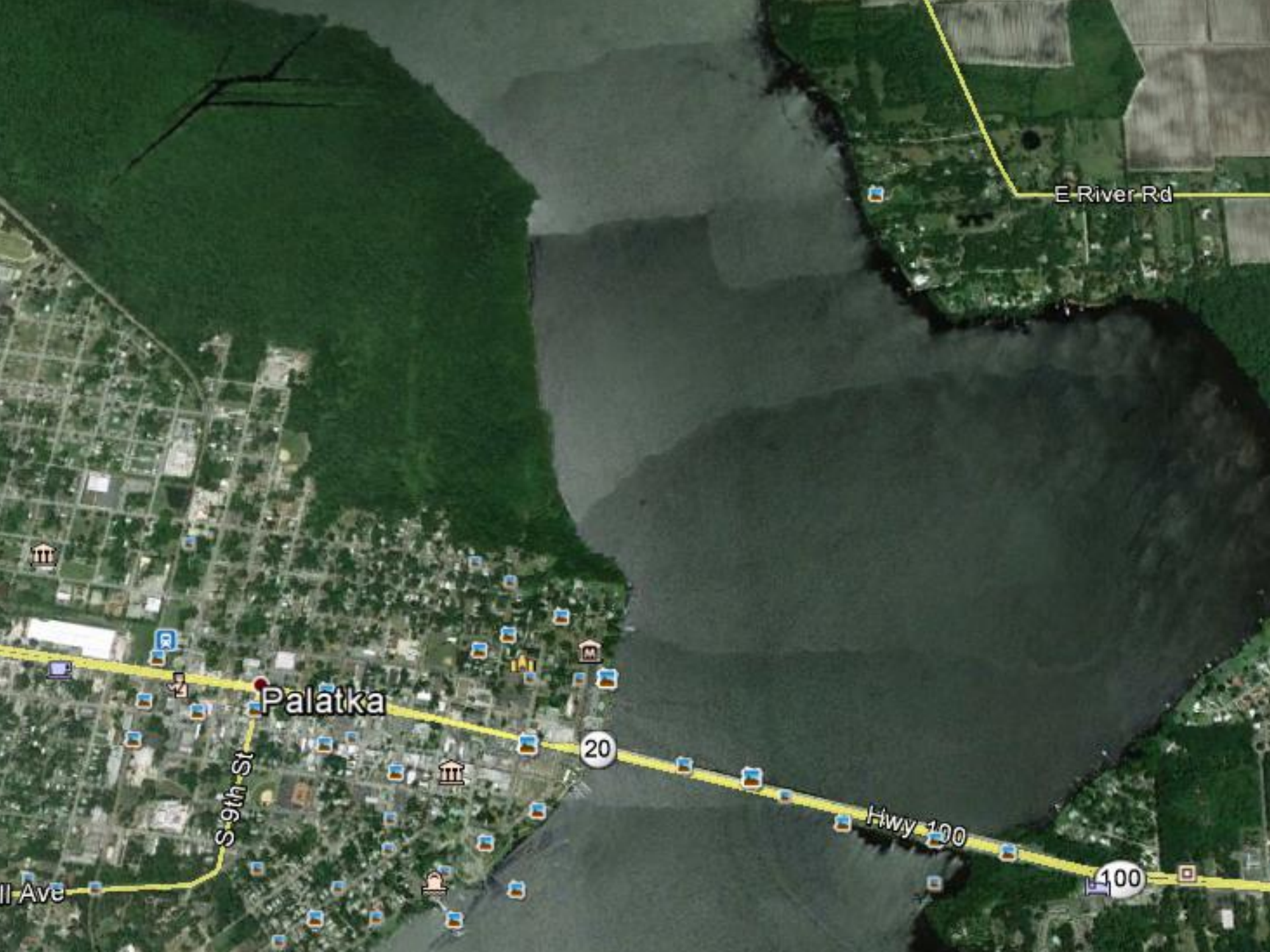




ST JOHNS RIVER

Moritani Pt

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	RM



E River Rd

Palatka

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20

Hiwy 100

100

ll Ave

Implications₁: Facts and Consequences

1. Low-lying areas will see an increase in flooding: magnitude, duration, and frequency.
2. Low lying septic tanks will stop working properly.
3. Wetlands will experience increased flooding; some may convert to open water.

Loss of wetlands may result in increased nutrient loading to the River, resulting in decreased water quality and increased plankton blooms.

4. All shorelines will move up-slope – some a little, some a lot.

Implications₂: To-Do

1. Development will have to retreat from the shoreline and move up-slope.
2. Planning and permitting must recognize sea level rise.

What role does NAML want to play?

“Enhance science, education and public engagement”*

*NAML Public Policy Priorities for FY 2016