

Building the Alliance for Collier County's Coastal Resilience

July 9, 2020

Science Solutions, Rookery Bay NERR

Michael Savarese,

Linda Penniman (former City Council), & Kevin Godsea

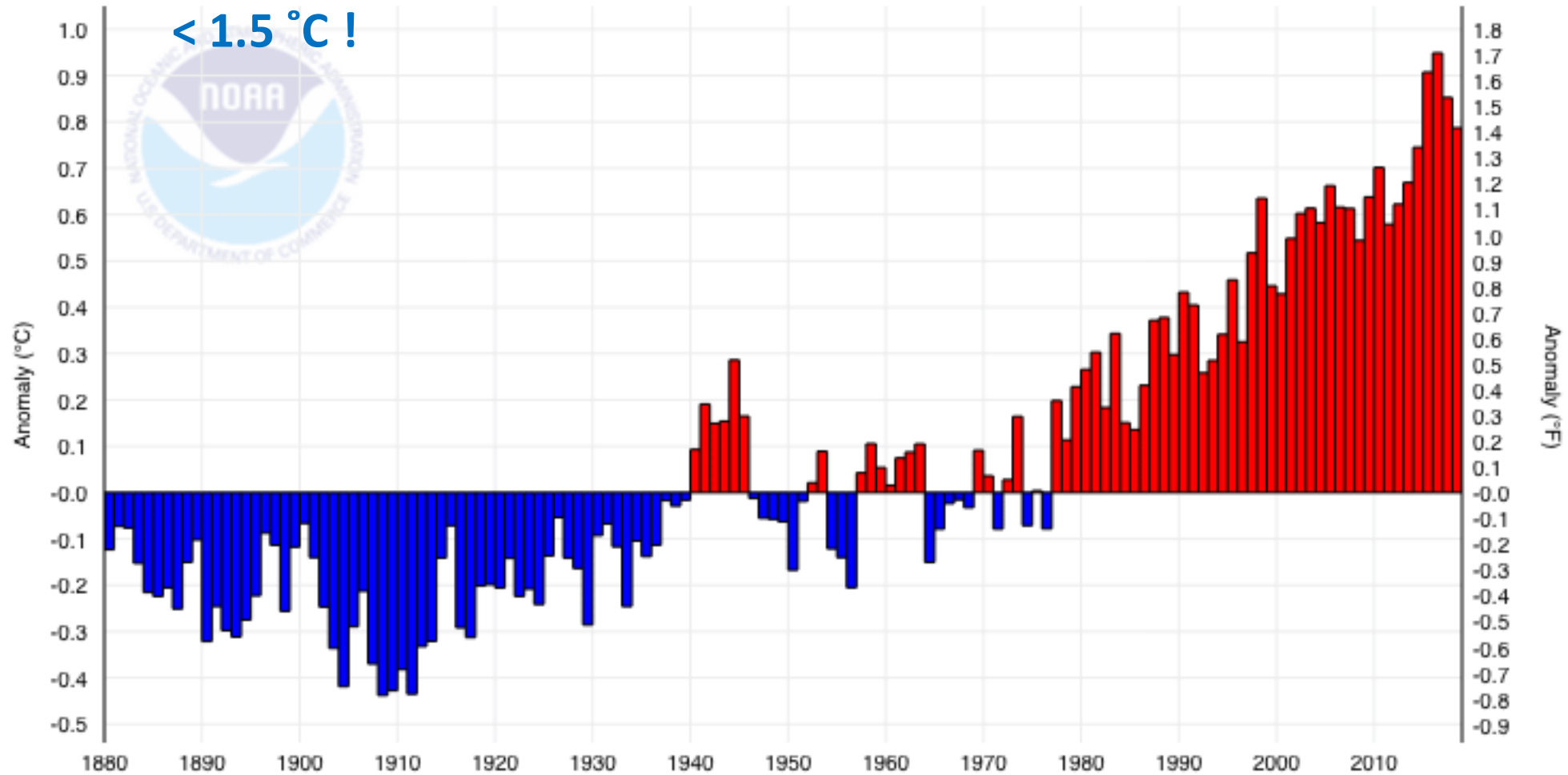


Part I: The Challenges . . .

- Addressing climate-change preparedness in an otherwise conservative political culture.
- Confronting or avoiding miss-perceptions concerning climate change.
- Disruption caused by pandemic and economic hardship.
- Engaging 4 jurisdictions and the competing interests of conservation and development.
- Bringing the best science *successfully* to management and policy.
- Accommodating and respecting the needs of urban, natural, and cultural resources.
- Extending the effort to the rest of Southwest Florida and beyond (poll asking for your County residency).

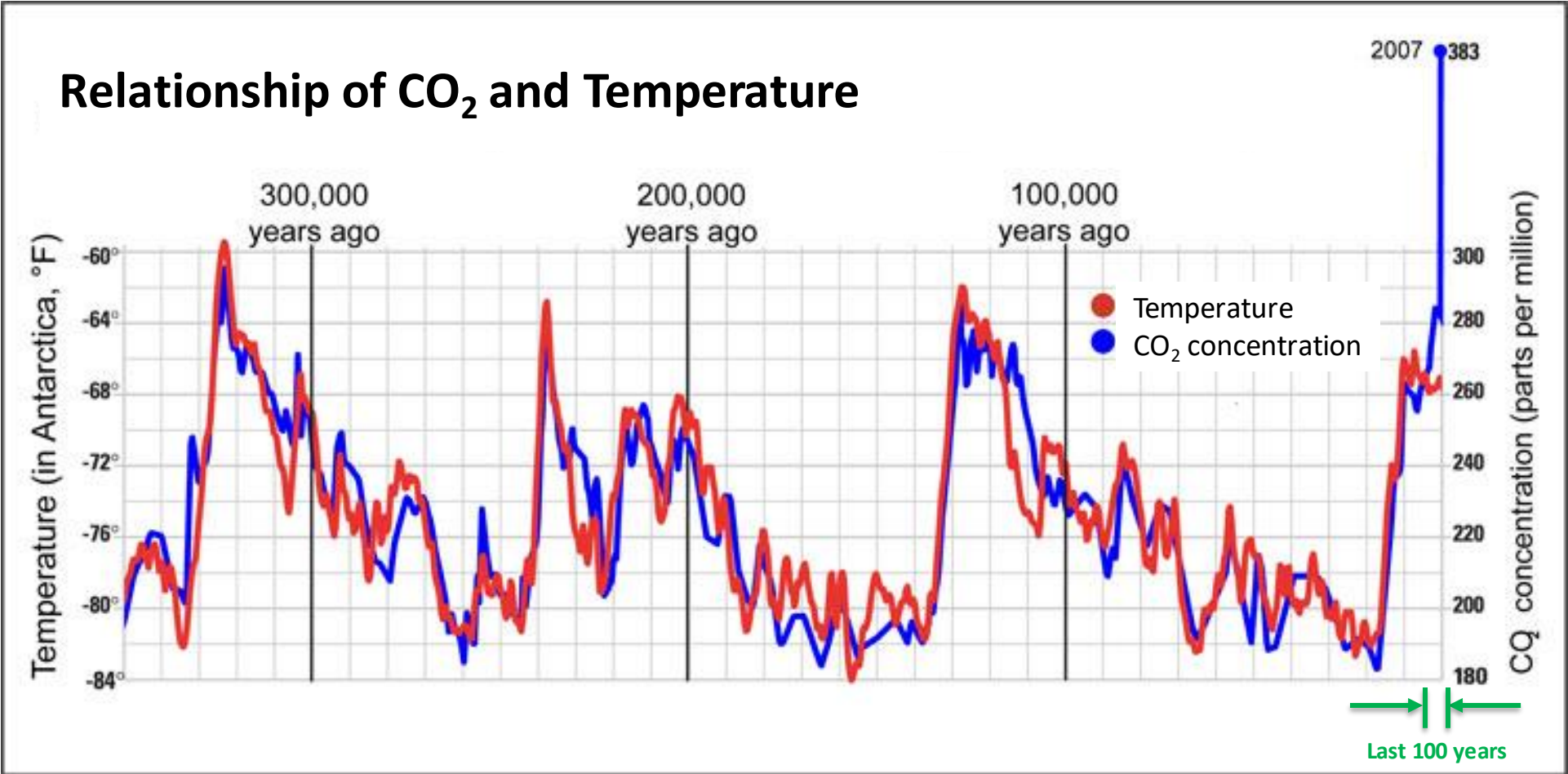
Part II: The Problem . . .

Departure of Global Temperature From Average, 1880 - 2018



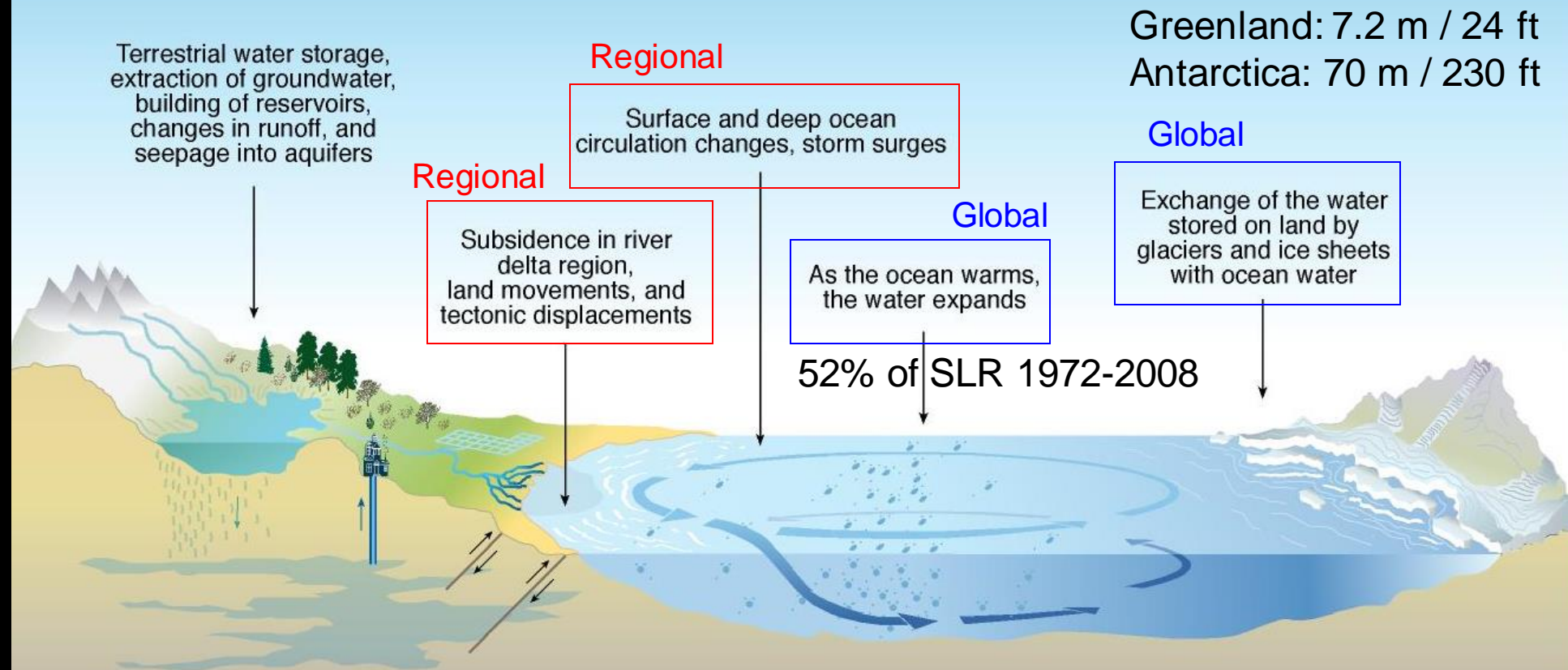
Climate Change: Planet's Greatest Existential Threat!

● 400 ppm
2018



**Correlation Between Temperature & CO₂
Dating Back Over 400,000 Years**

What causes the sea level to change?



IPCC 2001

SYR - FIGURE 3-4

**Warmer Oceans: More Intense Storms that are Wetter, Larger,
Fuel More Quickly, & Travel Slower**



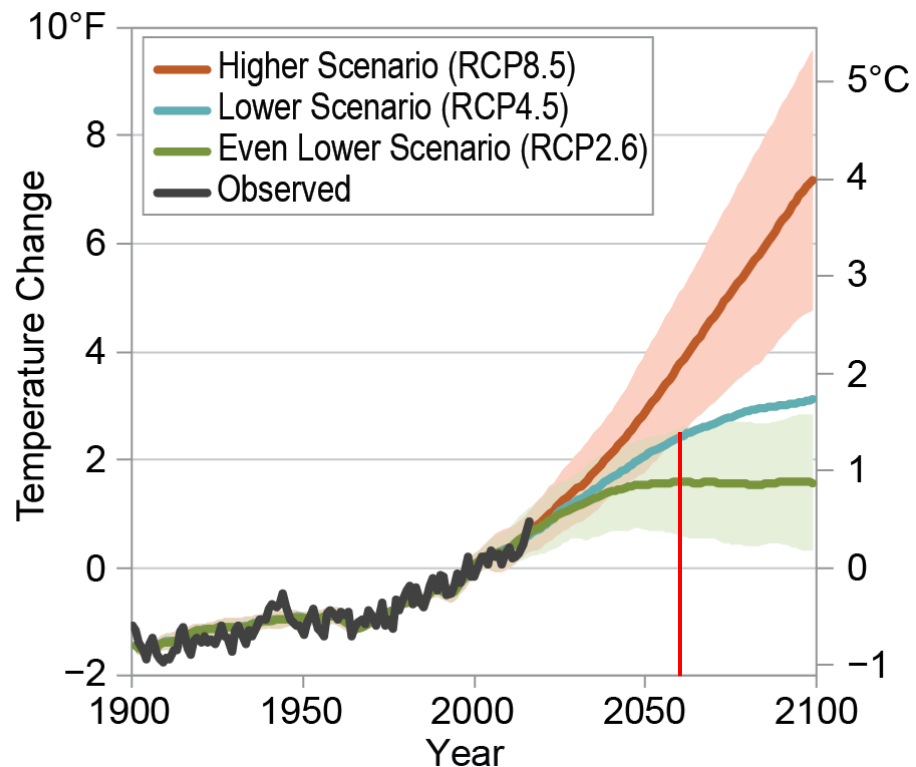
Katia, Irma, and Jose, Sept 8, 2017

Climate Change Preparedness – The Process

This road map accepts that the effects of climate change are given.
No consideration of “carbon mitigation”.



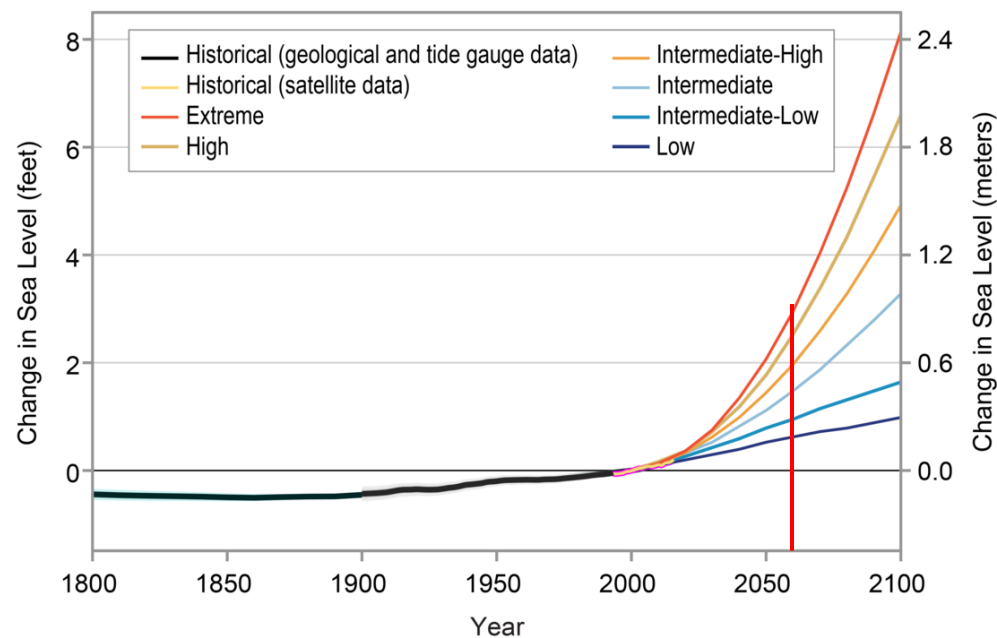
Global Average Temperature Change



Adaptation sustainable until 2060?
Can't adapt to the extremes!

Effects: Their Variability and Extremes

Treating the cause by: reducing / eliminating reliance on fossil fuels.



Mangrove Migration



Salt Marsh Pocking



Storm Surge Inundation



B

Current Impacts



Nuisance Flooding



Part III: The Tools . . .

ACUNE & ACUNE+: Tools for Vulnerability

- 2 awards from NOAA: \$1M & \$750K for Collier's coastal resilience
- Collaboration among: UF, FGCU, USGS, SFWMD, RBNERR, FLO-2D
- End users are urban, cultural, and natural resource managers
- ACUNE tools: Inundation from SLR, storm surge & nuisance flooding, effects of storms, attenuation of landscape, economic impacts, green infrastructural response
- ACUNE+ tools: Inundation from precipitation and fresh water flooding, biogeographic response of natural habitats
- To be followed by adaptation planning; County RFP



Agreeing on dates of interest and a sea-level curve . . .

Scenarios for Probabilistic Inundation Risk Mapping

Based on latest SLR science, including NOAA (2012, 2014, 2017)

	RSL (Regional Sea Level)		
Period	ACUNE 2.0 SLR (ft)		
	Low	Medium	High
Current	---	---	---
2030	0.39	0.72	1.15
2060	0.82	1.77	3.38
2100	1.28	3.77	8.36

RCP: Representative Concentration Pathway; 4.5: Paris Accord

Part IV: Effective Community Engagement: “Getting the Tools Off the Shelf”

- Good scientists not necessarily good communicators – need the right people.
- Building trust and respectability – time consuming, engage from start to finish.
- Are many audiences: general public, elected government, government staff, natural & cultural resource managers, NGOs – all need to be engaged.
- Requires political and diplomacy skills.

Community Engagement

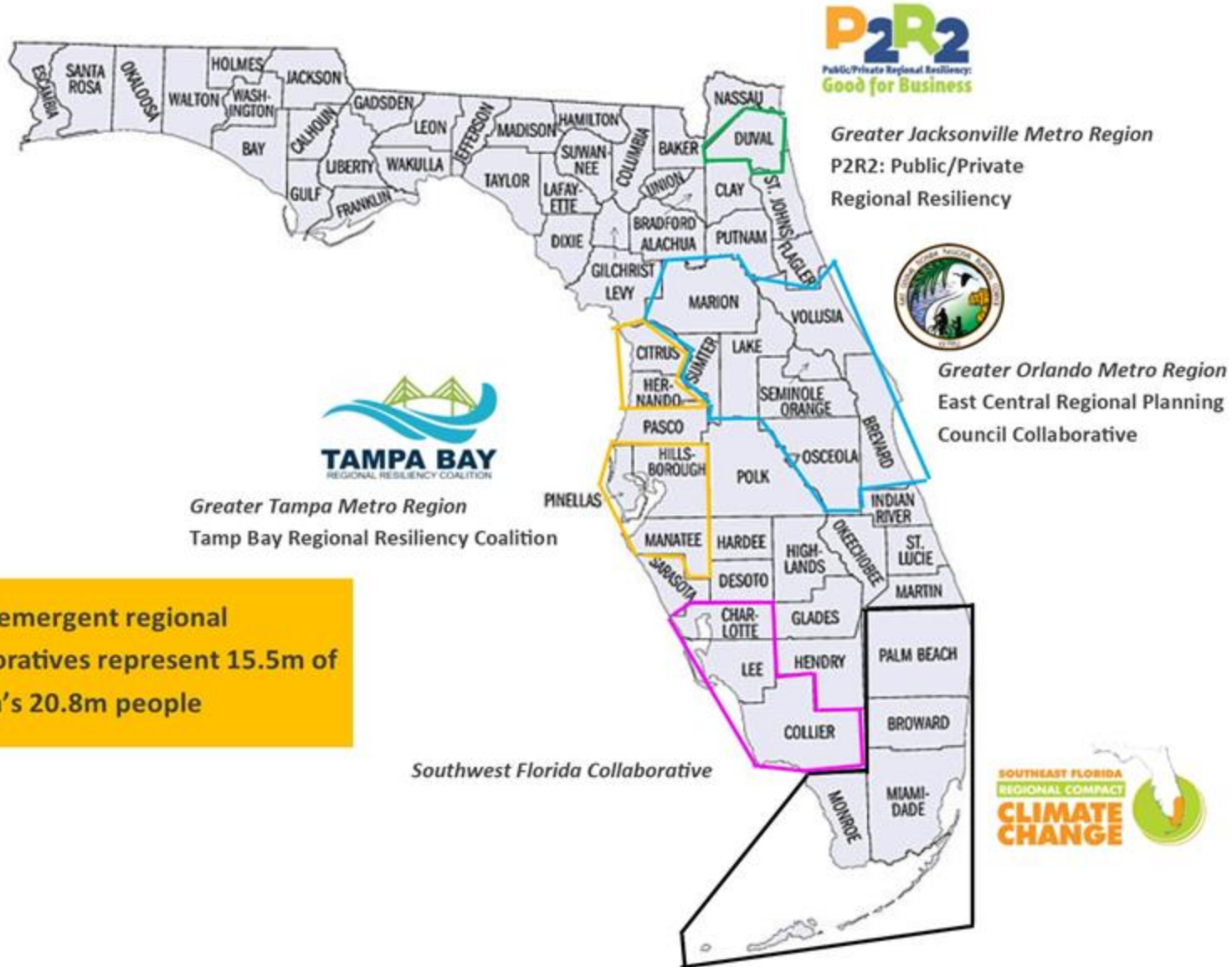
- General public:
 - Cooperative town halls with City and County government
- Two end user teams (~100 members):
 - Natural & Cultural Resource Management
 - Urban Resilience and Planning
- Engaging sectors of Collier's economy, culture, and social service; Collier County's League of Women Voters.
 - 100 civic leaders; SWOT analyses & asset identification
- Vulnerability workshops begin this fall; adaptation planning RFP this fall

Part V: Beyond Collier County . . .

SWFL Regional Resiliency Compact

- What's a Compact? A regional network united by common problems best solved through local leadership and shared resources to improve resilience.
- Goals:
 - share best practices, resources, and information
 - align their respective initiatives and efforts
 - co-produce assessments, public policy interventions, and other materials beyond the scope of any one single partner

Emergent Florida Collaboratives



These emergent regional collaboratives represent 15.5m of Florida's 20.8m people



SWFL Regional Resiliency Compact: Progress and Next Steps

1. Representatives from the 3 counties and 10 municipal governments plus 1 erosion prevention district are communicating via email and have convened three times (50 individuals).
2. The 14 jurisdictions have agreed on a purpose and set of objectives.
3. The group has composed and finalized an MOU.
4. The concept of the SWFL Compact has been presented to the various jurisdictions.
5. Ratification to begin with Charlotte County and Sanibel this month.

Thanks . . .

