

Climate Change, Cultural Resources, Community Conversations, and, When the Hour Permits, Cocktails!

North American Heritage at Risk

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Two Problems Stitch This Presentation & Conversation

1. Climate change's causation and effects often fall on deaf ears.
 2. And often, when people are paying attention, cultural assets and heritage are ignored.
- How do you engage and motivate decision makers?
 - From the top down: work with local government (ACUNE for Collier County and its cities; the SWFL Regional Resiliency Coalition).
 - From the middle outward: work with civic leaders (LWV interviewing community leaders).
 - From the bottom up: provide a venue for light-hearted education & conversation (Climate Change, Cocktails, and Conversation radio show).

Some Common Tenets

1. Predispose local governments by involving them every step of the process: from project development through implementation.
2. Bring professionals (natural, urban, and cultural resource managers) together with elected government and governmental staff.
3. Engage the social, cultural, and economic civic leaders. They often are more influential.
4. Involve the lay public, but don't lecture them.
5. Regional institutionalization of the process: regional alliances.

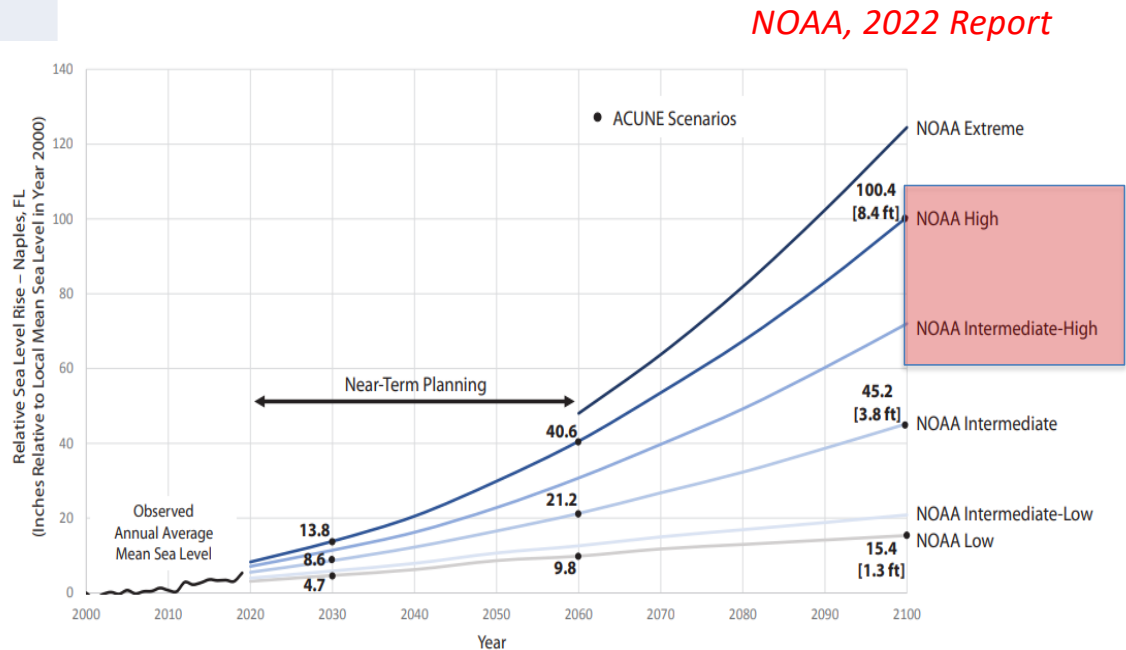
ACUNE: Adaptation of Coastal Urban and Natural Ecosystems Collier County Engagement

- Endorsements from BCC and 3 City Councils.
- 2 end user teams: (1) Urban Resilience & Planning and (2) Natural & Cultural Resource Management; 70+ members.
- Public presentations and workshops.
- Partnership with League of Women Voters: 78 Collier civic leaders interviewed.
- Groups involved in all aspects of the project, from development through application.

SLR Scenarios Based on NOAA's 2017 SLR Curves

Period	RSL (Regional Sea Level) - SLR (ft) ACUNE 3.0		
	Low	Medium	High
2030	0.39	0.72	1.15
2060	0.82	1.77	3.38
2100	1.28	3.77	8.36

Governments and end users agreed on the sea-level curves and planning horizons.





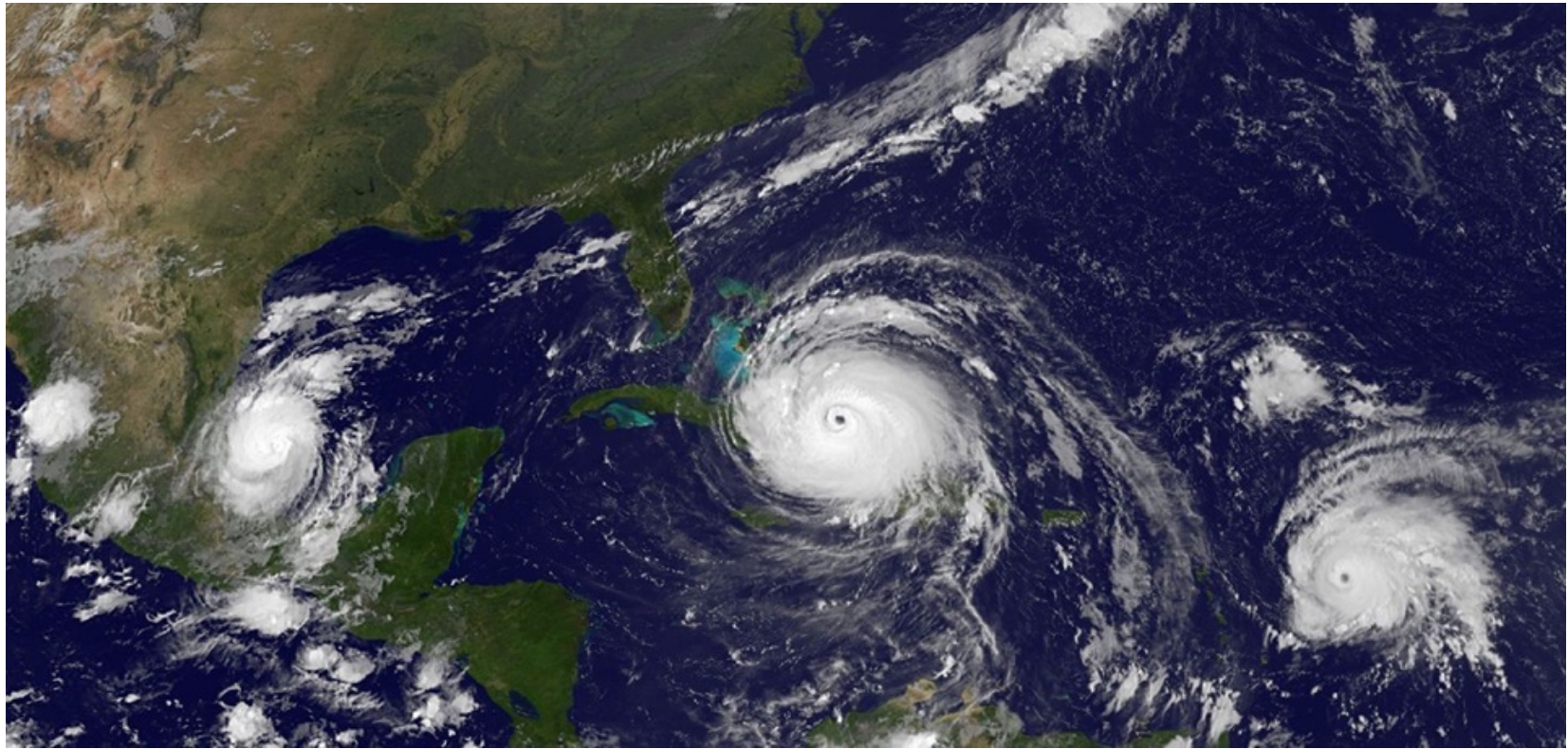
Calusa Mound, Shell Island



Road to Goodland, Marco Island

Nuisance Flooding / Chronic Inundation

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



Katia, Irma, and Jose, Sept 8, 2017

Storms on top of SLR!



Everglades City after Hurricane Irma, 2017

What's at stake?

Assets of all flavors were identified and mapped



**Economic
resources**



**Natural
resources**



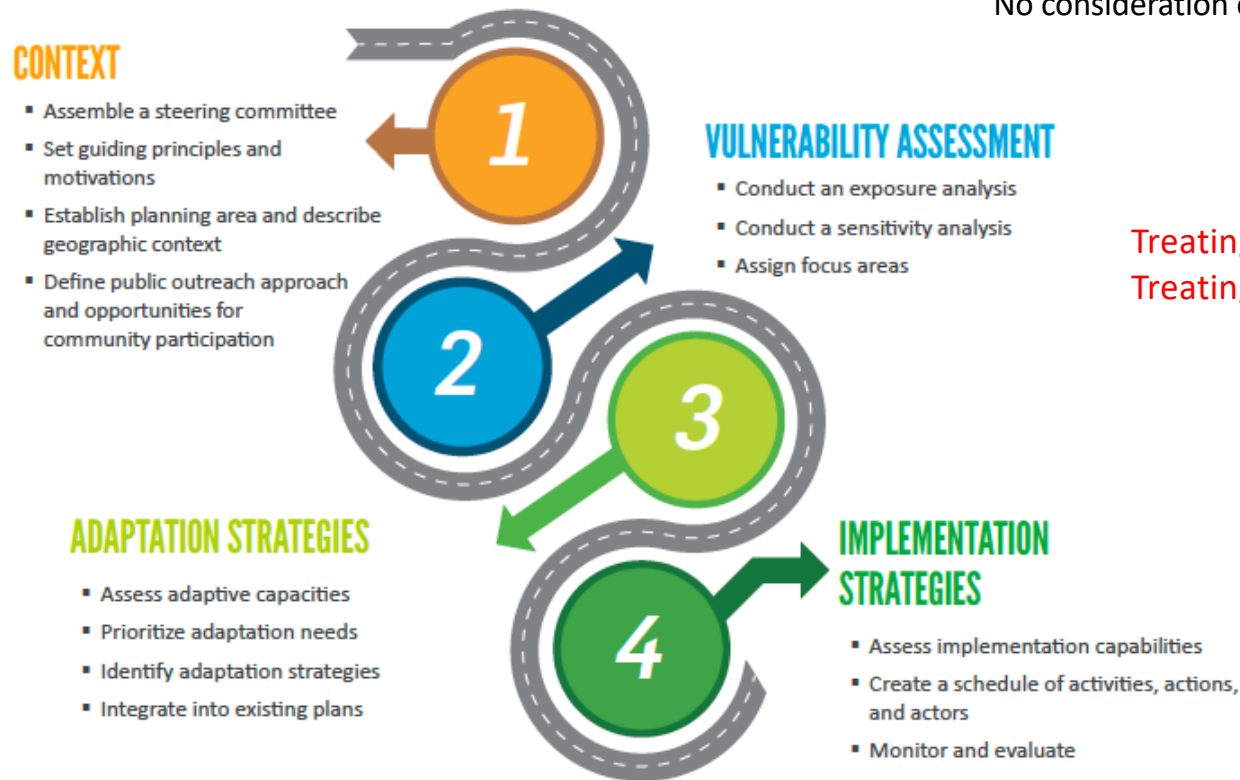
**Cultural
resources**

Climate Change Preparedness – The Process

How ACUNE fits into that process

This road map accepts that the effects of climate change are given.

No consideration of “carbon mitigation”.



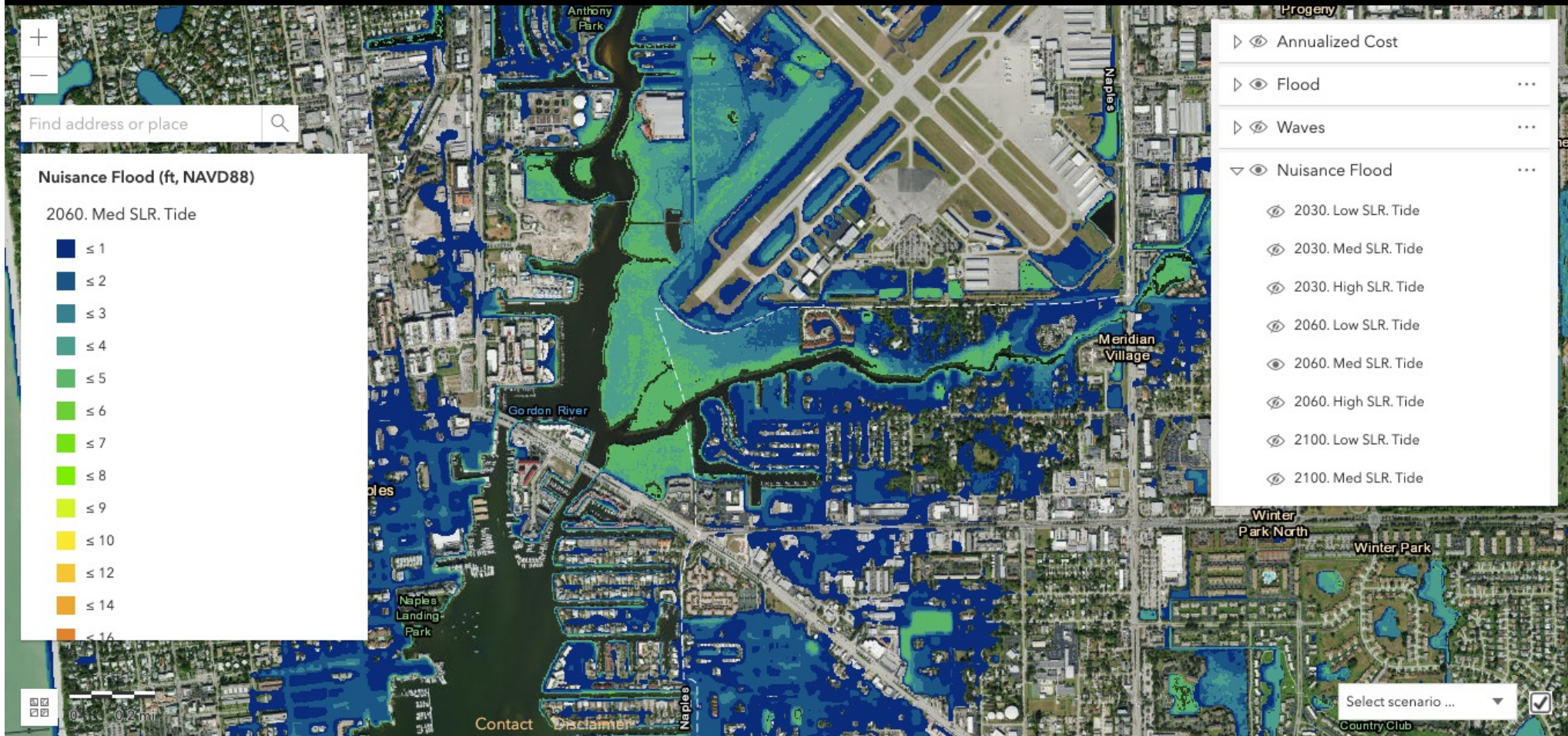
Treating symptoms: adaptation
Treating causes: mitigation

From: FL DEP 2018 “Florida Adaptation Planning Guidebook”

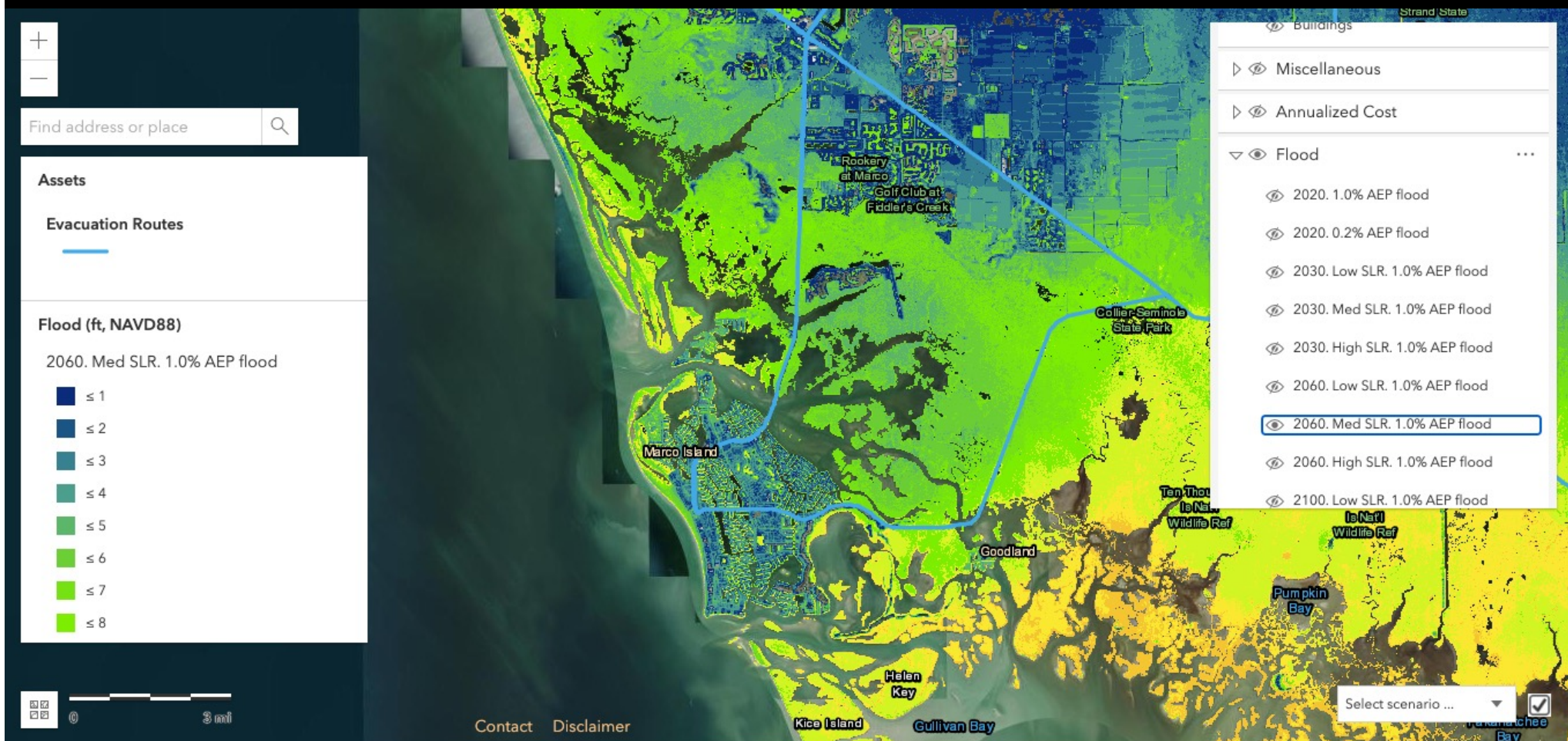
ACUNE USES THE FOLLOWING:

- ACUNE: Adaptation of Coastal Urban and Natural Ecosystems; a web-based vulnerability assessment tool kit
- CH3D-SWAN modeling: Inundation by SLR (nuisance flooding), waves or surge, +/- storms, storms adjusted for climate change
- Much more sophisticated than a bathtub model
- Review features: flood attenuation, statistical treatment of storms, 3 years + 3 SLR magnitudes, 1.0% & 0.2% AEP (annual exceedance probability)
- FEMA HAZUS economic impact maps: property loss annualized, by individual property & by regional polygons
- Rapid Forecasting tool: already being used by Collier Emergency Management

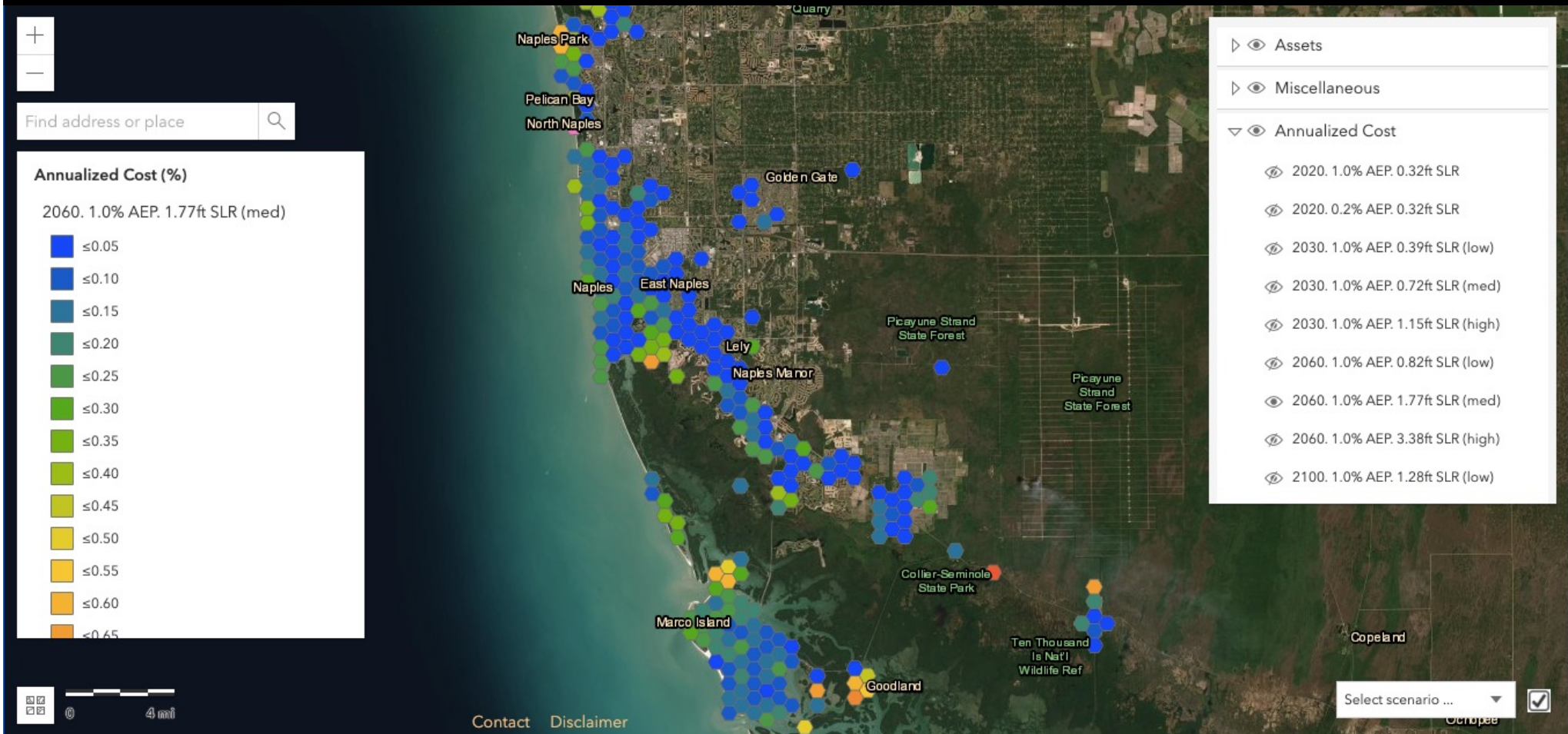
Example 1: Nuisance Flooding / Gordon River / 2060 / Med SLR, 1.77 ft



Example 2: Evacuation Routes Marco Island / 2060 / Med SLR, 1.77 ft / 1% AEP



Example 3: Annualized Property Costs / 2060 / Med SLR, 1.77 ft / 1% AEP



Communities are using ACUNE

- City of Naples is changing their stormwater management infrastructure.
- City of Naples is updating their vulnerability assessment.
- Everglades City is recomposing their Comprehensive Plan.
- Naples Botanical Gardens revising their Management Plan.
- Florida Public Archaeology Network is prioritizing the study and preservation of vulnerable critical archaeological and historical assets.

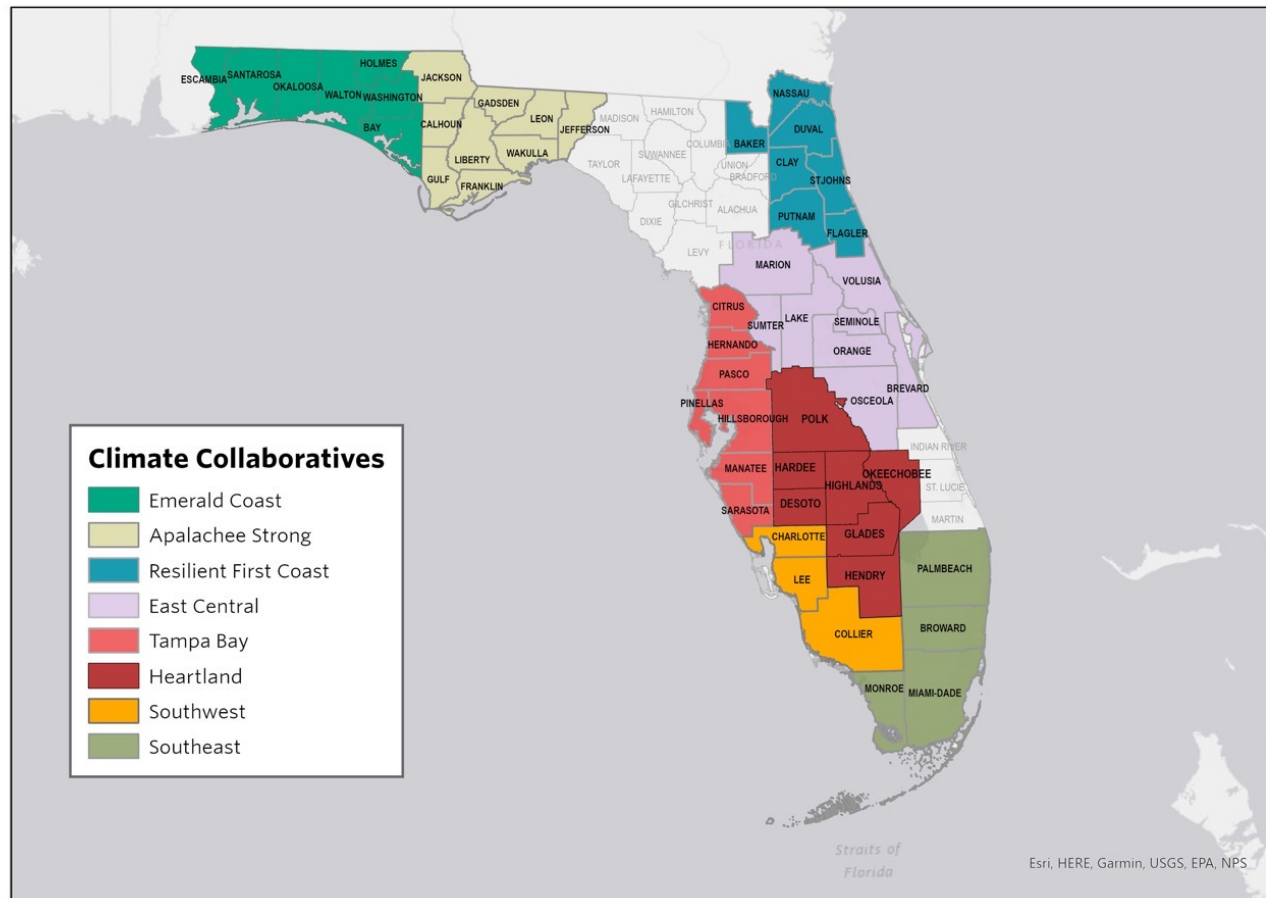


What Are Regional Climate Alliances?

- Improve resilience for sea-level rise, storminess, increased precipitation, and rising temperatures.
- A regional alliance united by common problems best solved through local leadership and shared resources.
- Efficient means for adjoining local governments to collaboratively “extend beyond” their respective boundaries to share, align, compete for resources.

Southwest Florida Regional Resiliency Coalition

- To understand our vulnerabilities to climate-change effects, and to best adaptively plan for those effects.
- The group has composed and finalized an MOU; ratified by 15 jurisdictions.
- FCRC Consensus Center (FSU) contracted to facilitate the Compact's design and operation (funding from the Water School).
- Goals for 1st year; funded by 2 DEP Resilient Florida Grants:
 - Gap analysis
 - Compile climate indicators
 - Critical assets compiled and mapped
 - Vulnerability tool development: ACUNE for entire region
- Goals for this year:
 - Identified projects that align most of the community:
 - Storm water impacts on infrastructure
 - Employing green infrastructure for resilience
 - Incentivizing sustainable energy use practices for government and business
 - Development of workshops for government



Southwest Florida Regional Resiliency Coalition unites:

- Collier, Lee, and Charlotte Counties
- Their 10 cities: Everglades City, Marco Island, Naples, Bonita Springs, Estero, Ft Myers, Ft Myers Beach, Cape Coral, Sanibel, Punta Gorda
- CEPD, Seminole Tribe

Climate Change, Cocktails, and Conversation

- End result of working too hard helping elected officials to understand climate change.
- Radio show conceived over beers.
- In October, 2021, XKeyWest agreed to air the program.
- In March, 2021, began recording.
- Material for 4 shows recorded.
- Listen this Sunday; slated to air at 9:00 pm:
<https://streamdb5web.securenetsystems.net/cirrusencore/wxkw>



Radio Show Recorded During Society for American Archaeology Meeting, Chicago, March 2022

- “Climate Change’s Threat to Our Cultural Resources”.
- Recorded at “Forbidden Root”, proprietor and guest bartender Randy Mosher.
- Discussants: Sara Ayers-Rigsby, Michael Aiuvalasit, Rachael Kangas, Sarah Miller, Carole Nash, Marcy Rockman, Heather Wholey.



Challenges for FPAN, for NAHAR?

- Methods you've employed?
- Effectiveness with local government?

Thanks . . .

