

# Resilient Communities: Lessons Learned from Hurricane Ian

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# Agenda

1. Introduction – Jim Paulmann
2. Sanibel, Florida – Paula McMichael
3. Insurance – Jessica Harrison
4. Babcock Ranch – Tyler Kitson
5. Funding – Diane Quigley
6. Q&A – All



# Presenters



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# Hurricane Ian and beyond

## Hurricane Ian

- **150-mph winds** struck landfall at Cayo Costa, Florida
- **2.6 million residents** across Florida lost power
- **10 to 15 feet** storm surge
- **\$120 billion** in damage
- **161 people** died



## Further Impacts

- **Displacement** of people
- **Disruption** of businesses
- **Ripple effect** on economy
- **Challenges** for construction
- **Rising** insurance rates



## Current Season

- **Record** warm ocean temperatures
- **Projected above-normal** 2024 hurricane season
- **Hurricane Debby**
  - Historic rainfall
  - Riverine flooding

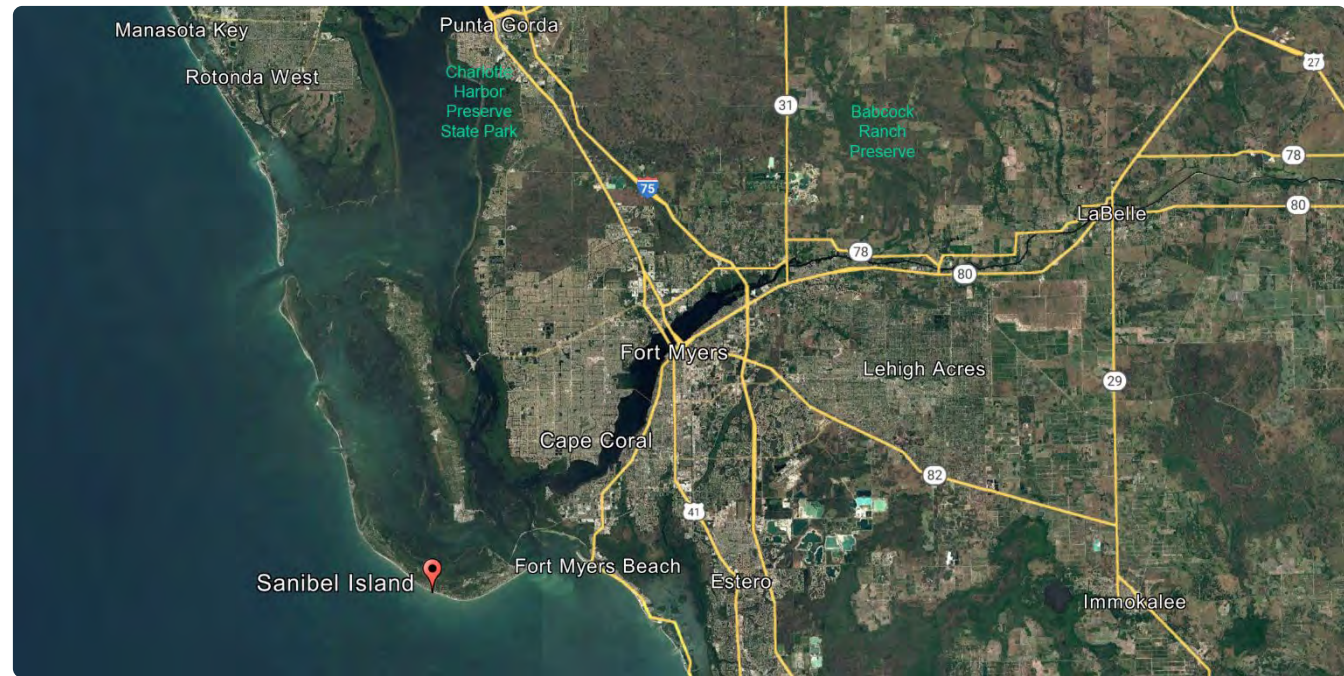




# Sanibel, Florida

## Main Lesson:

Retrofitting existing communities to be more resilient, particularly in coastal areas, is **complicated**, **controversial**, and **costly**.





## SANIBEL, FLORIDA





# Hurricane Ian – Before



# Hurricane Ian Impacts – After (10/2/2022)





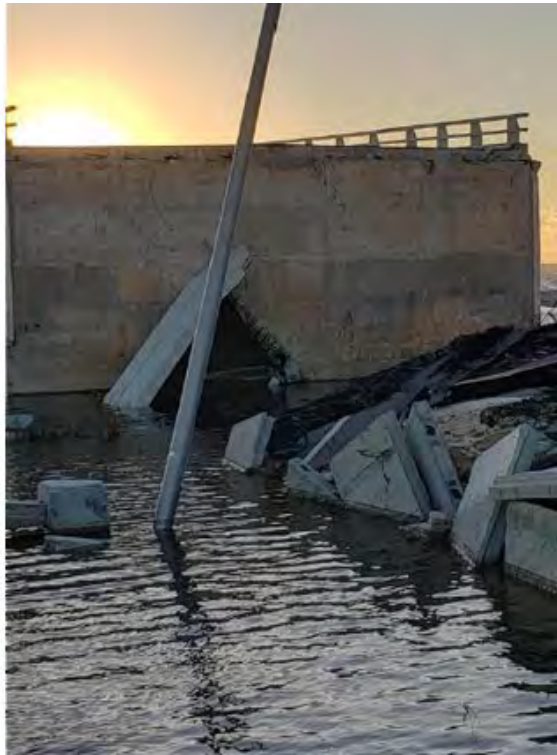
## SANIBEL, FLORIDA





SANIBEL, FLORIDA

RESILIENT COMMUNITIES: LESSONS LEARNED FROM HURRICANE IAN





# Lesson 1: If it can fail, you should plan that it will.

*The Sanibel Causeway was rebuilt in 2007.*

From the Sanibel Plan:

**Policy 3.8.** Encourage Lee County to operate and maintain their Bridge and Causeway facility, which runs between the mainland and Sanibel, to satisfy Sanibel's long-term need for an evacuation route to the mainland and a recovery route from the mainland. It is important to keep the bottom of the roadbed for the bridges of the Sanibel Causeway elevated above the level of the anticipated storm surge of a Category 3 hurricane and to keep the bridges of sufficient width to permit motor vehicle traffic to bypass disabled vehicles. . . .

The City has constructed docking facilities at the City boat ramp, located adjacent to Causeway Boulevard, to facilitate deliveries of personnel and equipment by shallow-draft barges, should vehicular access via the Causeway be interrupted do [sic] to storm damage.



SANIBEL, FLORIDA

RESILIENT COMMUNITIES: LESSONS LEARNED FROM HURRICANE IAN



## Lesson 2: Protect historic resources.

*Beware the exemption from building code and flood regulations for historic structures.*



Sanibel Island Lighthouse and Keepers' Quarters built 1884—photo ca. 1995

Added to the National Register of Historic Places in 1974



## SANIBEL, FLORIDA





# Lesson 3: Start making policy and regulatory changes now.

Ch. 2023-349 LAWS OF FLORIDA Ch. 2023-349

counties designated for individual assistance and public assistance (categories A-G) in the Federal Emergency Management Agency disaster declaration for Hurricane Idalia.

Section 15. Section 14 of chapter 2023-304, Laws of Florida, is amended to read:

Section 14. (1) Due to the impacts of Hurricane Ian, Charlotte, Collier, Desoto, Glades, Hardee, Hendry, Highlands, Lee, Manatee, and Sarasota Counties, and any a county or municipality located within one of those counties, may entirely or partially within 100 miles of where either Hurricane Ian or Hurricane Nicole made landfall shall not propose or adopt any moratorium on construction, reconstruction, or redevelopment of any property damaged by Hurricane Ian or Hurricane Nicole; propose or adopt more restrictive or burdensome amendments to its comprehensive plan or land development regulations; or propose or adopt more restrictive or burdensome procedures concerning review, approval, or issuance of a site plan, development permit, or development order, to the extent that those terms are defined by s. 163.3164, Florida Statutes, before October 1, 2026 2024, and any such moratorium or restrictive or burdensome comprehensive plan amendment, land development regulation, or procedure shall be null and void ab initio. This subsection applies retroactively to September 28, 2022.

## SB 250 Natural Emergencies

Effective July 1, 2023

Retroactive to September 28, 2022

Special session September 2023 following Hurricane Idalia

CS/HB 1-C – Disaster Relief – signed into law November 13, 2023 – extended to October 1, 2026



# Initial Staff Responses Approved by City Council | November 1, 2022


## 60-day Zoning in Progress

- a. Resort housing development regulations
- b. Outdoor lighting
- c. Beach accessway standards
- d. Dune restoration
- e. Vegetation buffers – maintenance standards, timing of restoration
- f. Environmental performance standards related to vegetation (landscaping) and use of sod or grass
- g. Commercial and institutional uses – site planning standards, parking standards
- h. Town Center General and Town Center Limited zoning districts – required conditions
- i. Commercial and Institutional Uses – architectural design standards and examples

## 45-day Building & Development Permit Moratorium

## Lesson 4: Disasters exacerbate existing problems.

Press Release - For Immediate Release  
City of Sanibel  
November 16, 2023  
Contact: City of Sanibel Building & Planning Department  
Phone: (239) 472-4136



**LAST CHANCE - Housing Needs Survey (Please Respond and/or Share!)**

Any member of the Sanibel Community is invited and encouraged to complete this short survey (less than 15 minutes!) - especially those on a fixed income or who commute to their Sanibel place of work from an off-island residence. The survey questions are designed to better understand the needs of the Sanibel workforce and low-moderate income residents that will guide decision-making for the Below Market Rate Housing (BMRH) Program administered by Community Housing & Resources Inc. (CHR).

Our community partners, including Sanibel Captiva Islands Chamber of Commerce, CHR, & FISH of SANCAP are helping to spread the word - but we need your help too! Please share this email or survey link with your Sanibel neighbors and friends in our workforce community. Your participation and input are greatly appreciated.

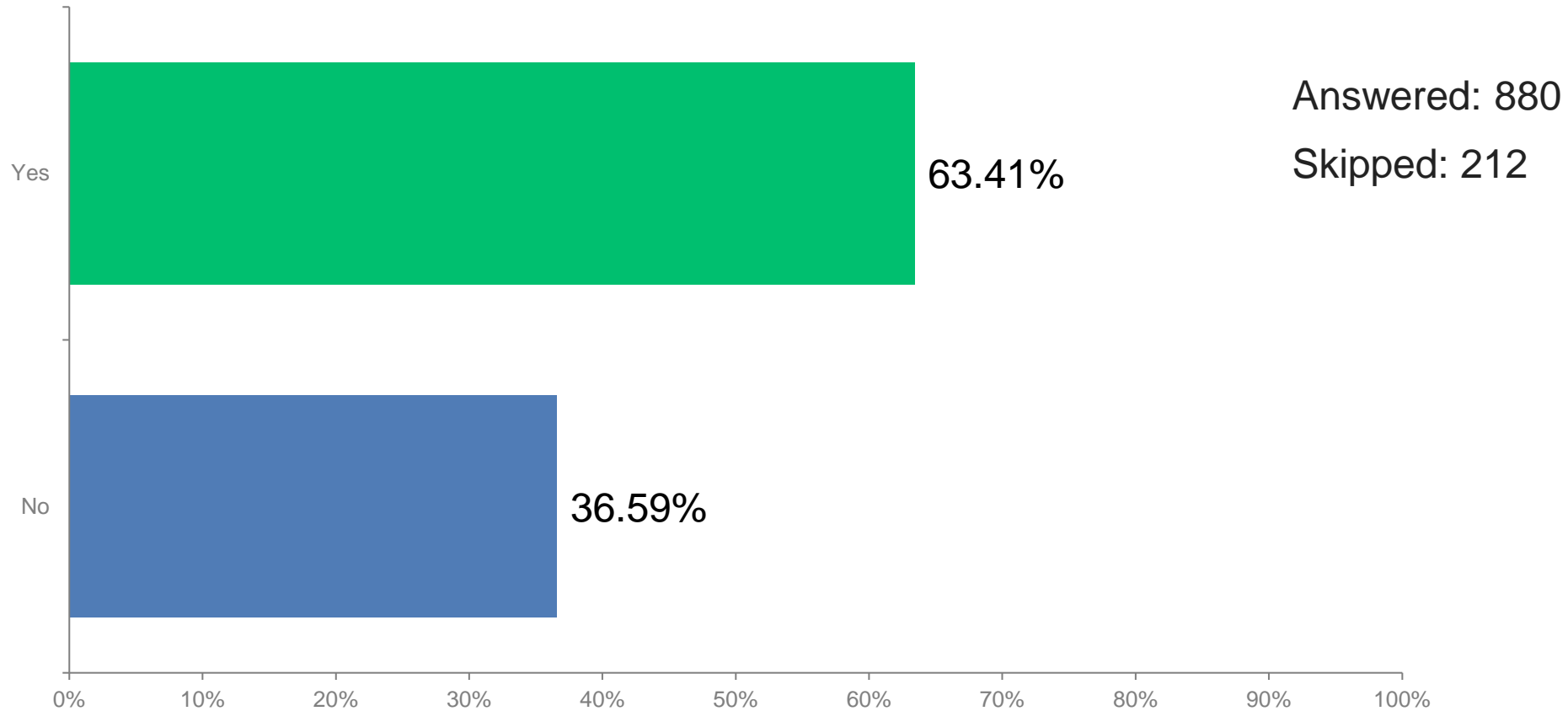
Please limit survey response to one per person. Contact the Planning Department (239)-472-4136, if you have any questions.

### Housing Affordability Survey

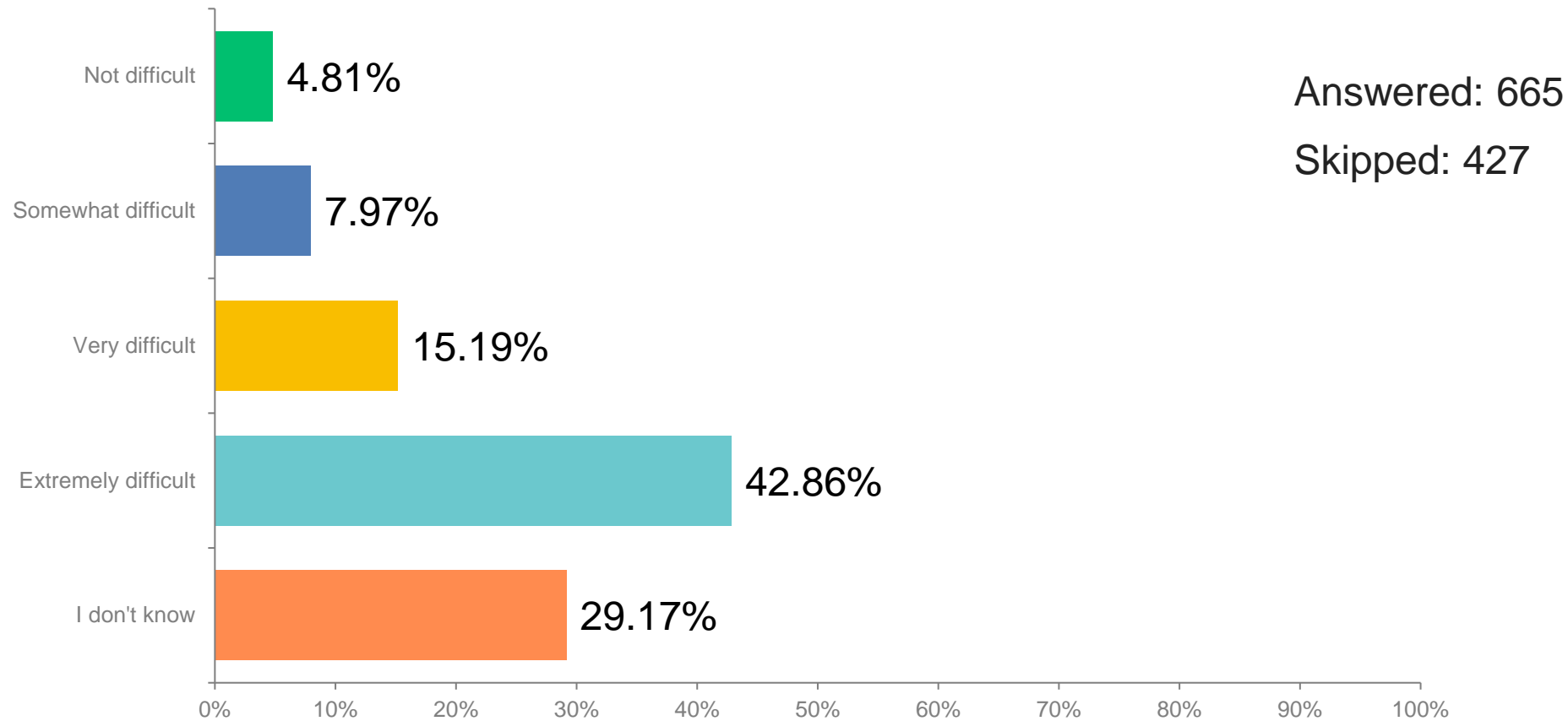
October–November 2023



## Q17: Does the cost of insurance impact your housing decisions?



## Q20: Please rate how difficult is it to find reasonably priced housing near your place of employment.





## Lesson 5: The Florida building code works.

*Make sure you are enforcing substantial damage / substantial improvement standards.*





SANIBEL, FLORIDA





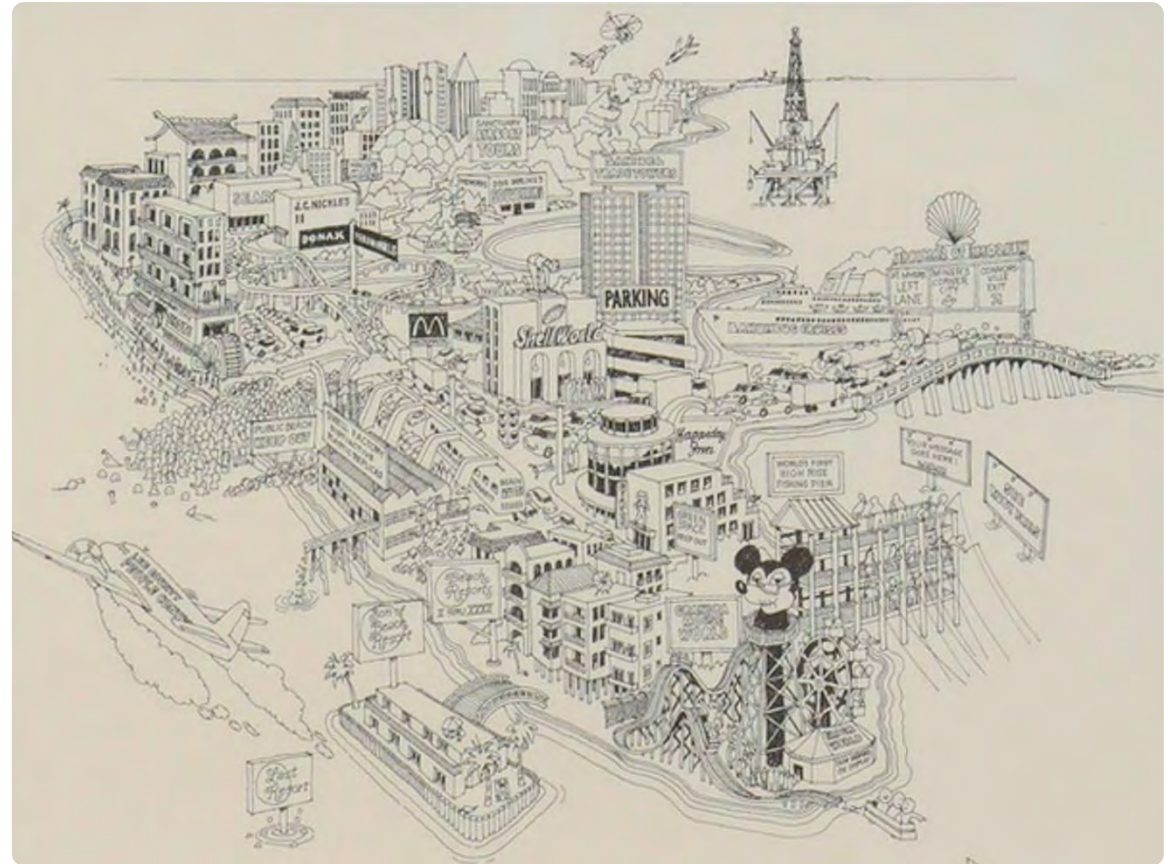




## Lesson 6: Limit development in the coastal high hazard area.

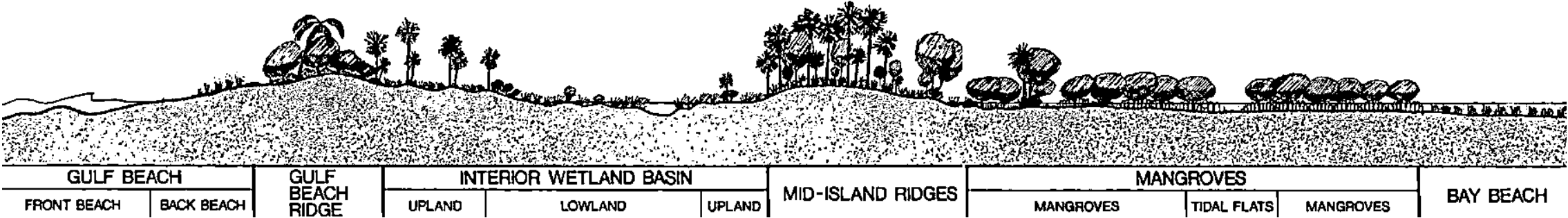
### Sanibel Island—Alternative Future?

What could have been ?!?!?!?!!





# Natural Systems from Gulf to Bay

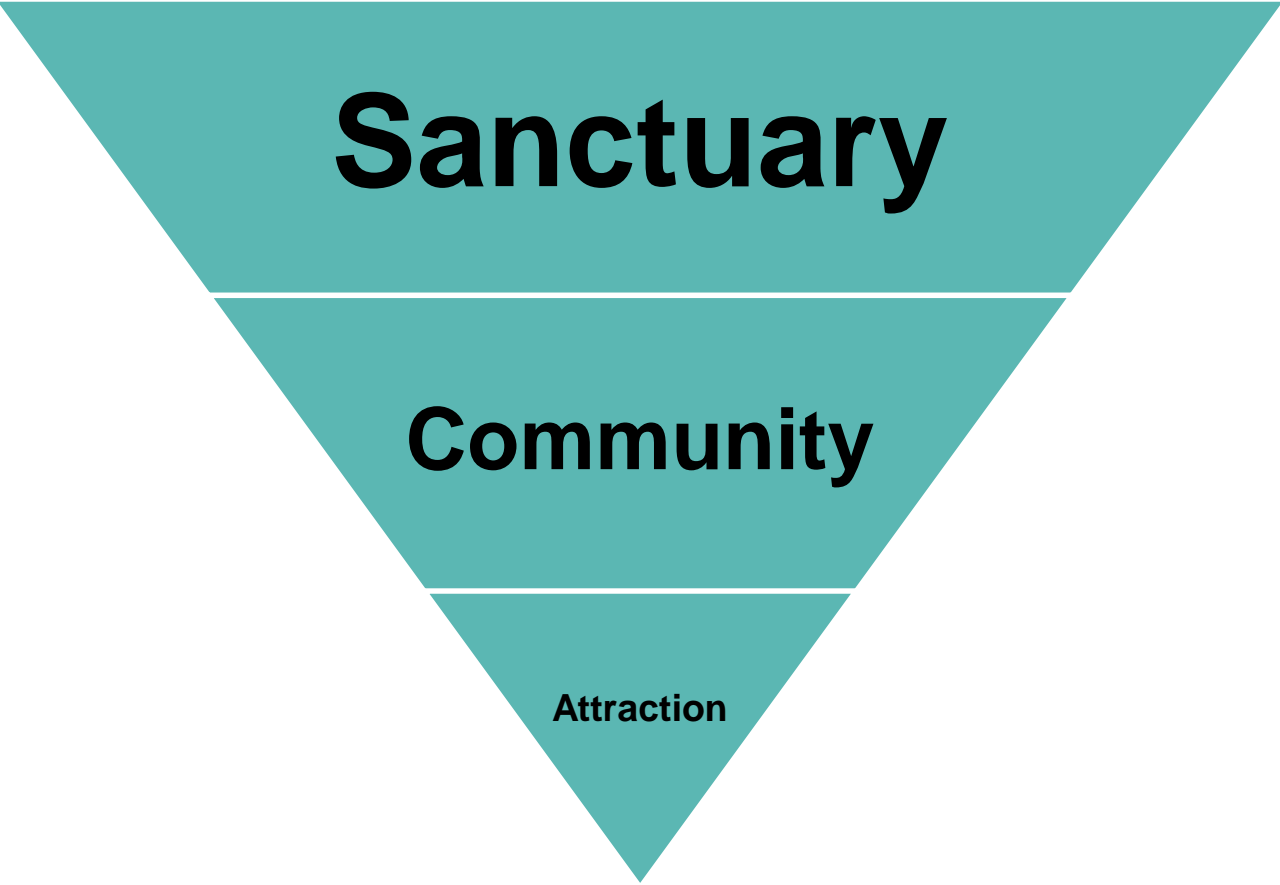


# Ecological Zones based upon Natural Systems

<b>A</b>	Gulf Beach Zone	<b>G</b>	Altered Lands Zone
<b>E-2</b>	Gulf Beach Ridge Zone	<b>E-1</b>	Blind Pass Zone
<b>D-1</b>	Lowland Wetlands Zone	<b>C</b>	Mangrove Zone
<b>D-2</b>	Upland Wetlands Zone	<b>B</b>	Bay Beach Zone
<b>F</b>	Mid-Island Ridge Zone		



# City of Sanibel Vision Statement



# Original Sanibel Plan (Adopted 1976)

## Lee County Plan

- **30,000** Residential Units
- Virtually no environmental safeguards

## Sanibel Plan

- **7,800** Residential Units
- Established to sustain ecological balance and preserve and restore natural settings for residents, visitors, and wildlife



SANIBEL, FLORIDA

## Main Lesson

Retrofitting existing communities to be more resilient, particularly in coastal areas, is **complicated, controversial, and costly**.

**And you don't have a choice.**





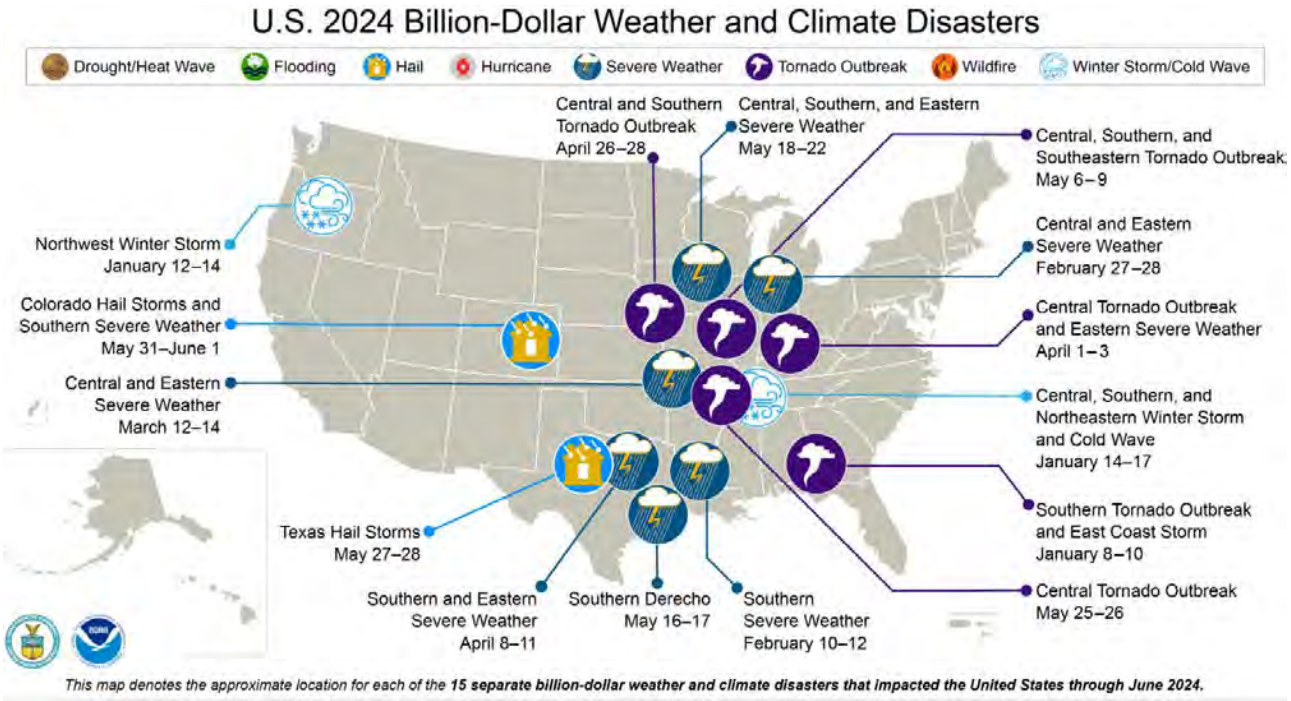
# Rising Insurance Costs

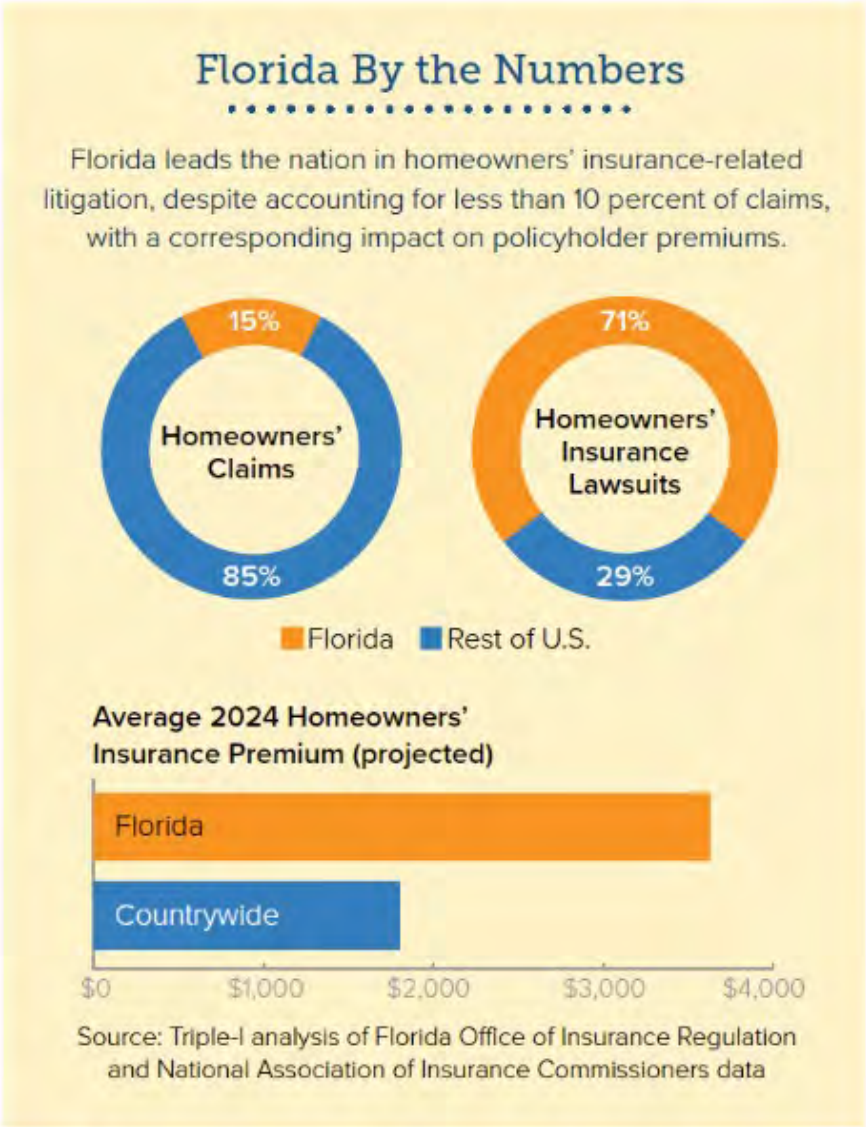
## How did we get here?

- Losses due to storms
- Declining number of companies offering insurance in the state
- Excessive litigation







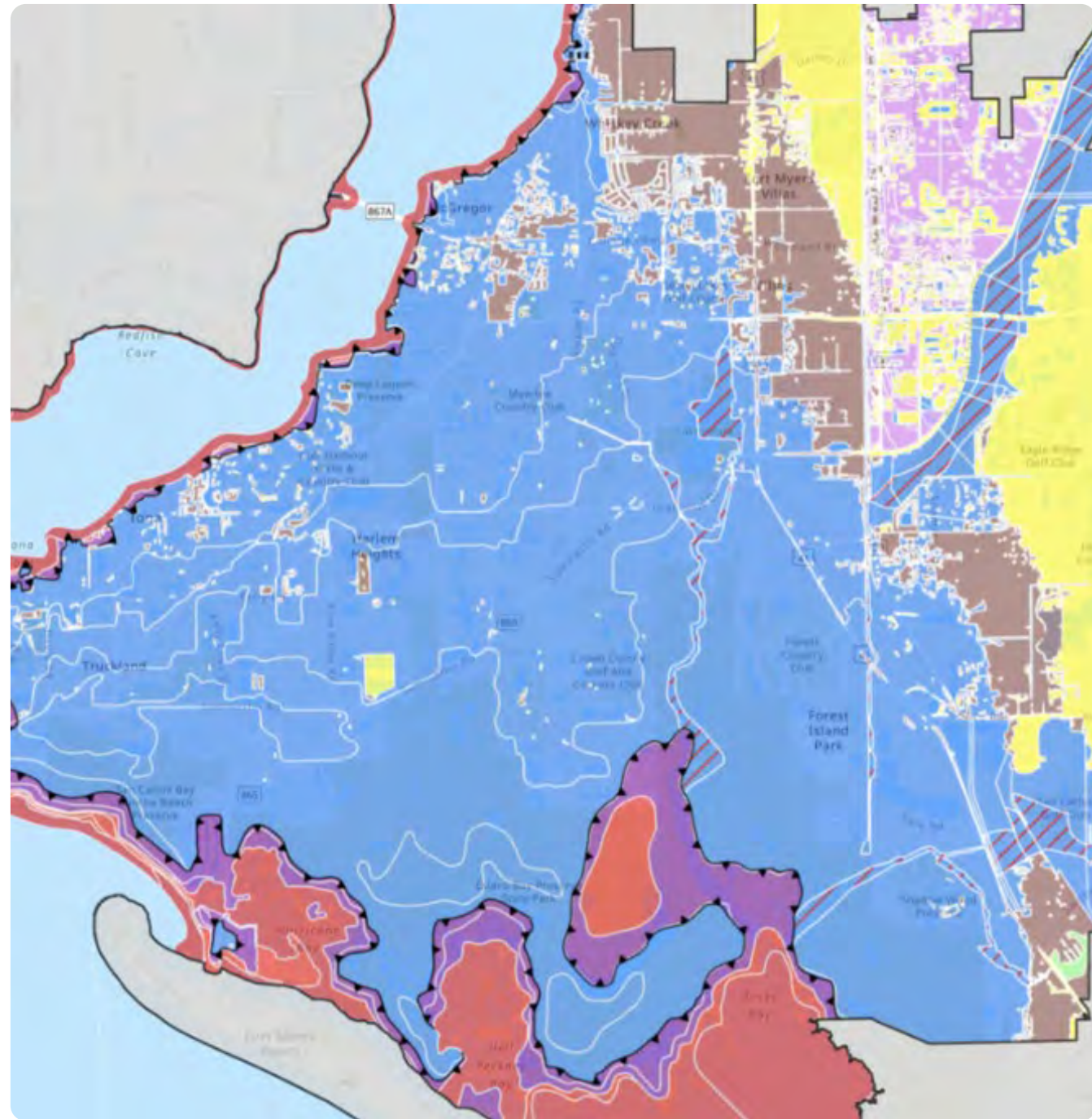




# FEMA Challenges

## FEMA

- Flood Zones
- Remapping







## FEMA

- Base Flood Elevation in Post-Firm Buildings
- Other limitations to coverage
  - Outdoor property
  - Landscaping
  - Temporary living expenses



### 8. Items of property below the lowest elevated floor of an elevated post-FIRM building located in zones A1-A30, AE, AH, AR, AR/A, AR/AE, AR/AH, AR/A1-A30, V1-V30, or VE, or in a basement, regardless of the zone. Coverage is limited to the following:

- a. Any of the following items, if installed in their functioning locations and, if necessary for operation, connected to a power source:
  - (1) Central air conditioners;
  - (2) Cisterns and the water in them;
  - (3) Drywall for walls and ceilings in a basement and the cost of labor to nail it, unfinished and unfloats and not taped, to the framing;
  - (4) Electrical junction and circuit breaker boxes;
  - (5) Electrical outlets and switches;
  - (6) Elevators, dumbwaiters, and related equipment, except for related equipment installed below the base flood elevation after September 30, 1987;
  - (7) Fuel tanks and the fuel in them;
  - (8) Furnaces and hot water heaters;
  - (9) Heat pumps;
  - (10) Nonflammable insulation in a basement;
  - (11) Pumps and tanks used in solar energy systems;

# Looking ahead

- Citizens—carrier of last resort?
- Demographic challenges
  - What types of risks are carriers wanting to insure:
    - Newer construction
    - Newer roofs
    - Away from the coast
    - Impact glass









# The Vision—Live a Better Life

Smart growth and preservation can work together. Once 18,000 acres of land, now a groundbreaking town with sustainability in its infrastructure. From solar energy to alternative transportation to vibrant gathering spots, Babcock Ranch is an innovative, welcoming town for everyone.

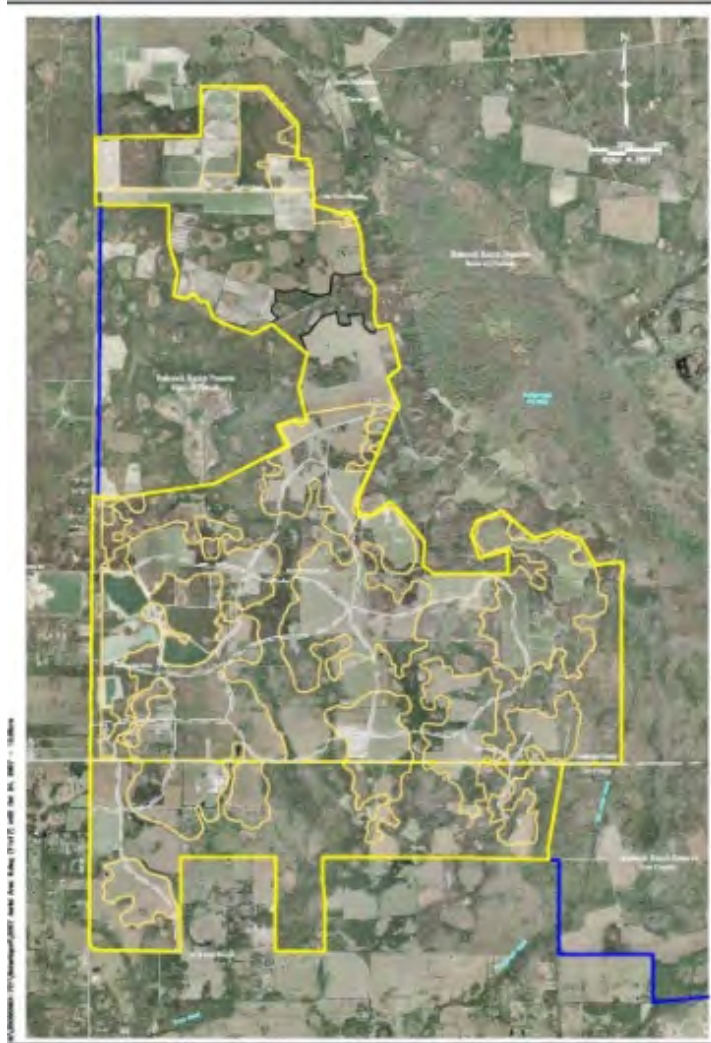


## Location:

- Babcock Ranch is located away from the coast and on the highest ground in the area
- All development is beyond the reach of coastal storm surge—at elevations of 25 feet or more above sea level
- All development is located outside of flood zones



## Green Ways and Flow Ways Delineated



## Preservation, Restoration, and Creation of Environmentally Sensitive Area





# Resilient By Design



When storms take aim at Southwest Florida and evacuation orders are issued, residents of Babcock Ranch are at a distinct advantage. Storm safety and resiliency has been factored into every element of design and engineering of the town. Babcock Ranch planners have embraced the latest technologies and incorporated best practices to minimize risk and allow for quick recovery after storms pass.

- **Storm Hardened Utilities**
- **Strong Building Codes**
- **Storm-ready Landscaping**
- **Innovative Stormwater Management System**

































# Learning from Hurricanes

# Post-Irma Enhancements

## Southwest Florida Evacuation Center at Babcock Ranch – ICC 500 Certification

- Only shelter in the region designed and built to ICC 500 standards
- Rated to withstand winds up to 180 mph
- Certification requirements include backup power generation with capacity to operate all systems in the 40,000-square-foot building
- Certification was still pending delivery and installation of the generator when Hurricane Ian came ashore
- The shelter was activated to house Ian evacuees while still awaiting final certification and it came through the storm without ever losing power
- Delivery and installation of the 350KW generator in mid-December fulfilled final requirement for ICC certification





# Post-Ian Enhancements

## Smart Pond Functionality

- New functionality has been added to the monitoring system to enable water managers, in coordination with the water management district, to proactively lower lake water levels in advance of a large storm
- The remotely operable weirs benefit both Babcock Ranch and neighboring communities by expanding flood water storage capacity to capture even more runoff from larger storms



## New FPL Substation

- Construction will soon be underway on a second FPL substation to serve Babcock Ranch
- The additional substation will provide critical redundancy—should storm damage take one of the substations offline, the second substation will keep power flowing to the community



# Future Planning



# Community, Resident, and Asset Planning

## **Pre-Hurricane Checklist**

- Builders
- Assets
- Community Residents
- Checkpoints starting at 72 hours

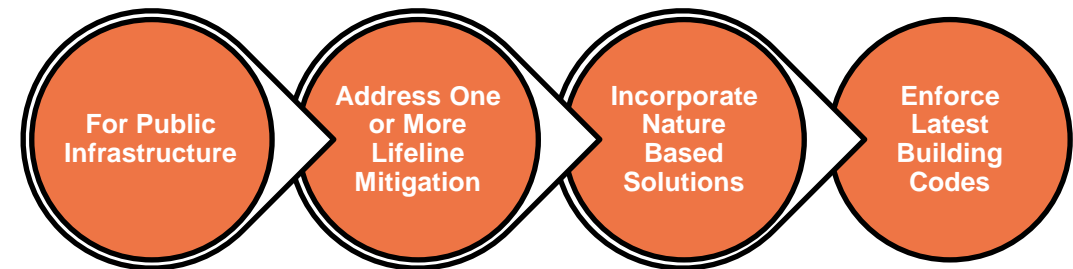
## **Post-Hurricane Recovery**

- Goal: Open for Business
- Safety and Access
- Recovery and Documentation
- Learn and Adjust



# Pre-Disaster Mitigation

- FEMA Grants
  - Benefit/Cost Analysis (BCA Toolkit)
- Pre-Disaster Mitigation (PDM)
- Flood Mitigation Assistance (FMA)
- Hazard Mitigation Program (HMPG)
- Community Development Block Grants (CDBG) – Hazard Mitigation (MIT)
- Building Resilient Infrastructure and Communities (BRIC)
  - Direct Technical Assistance (DTA) for small communities







- National Fish and Wildlife Foundation (NFWF)
- National Coastal Resilience Fund (NCRF)
  - Nature Based Resilience Solutions
- Florida Department of Environmental Protection (FDEP) Resilient Florida Grants (RF)
  - Planning
  - Regional Resilience Entity
  - Implementation
- Environmental Protection Agency (EPA) Community Change Grants
- Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT)



## FUNDING OPTIONS

- Midsize and Large Drinking Water System Infrastructure Resilience and Sustainability Program
- Drinking Water System Infrastructure Resiliency and Sustainability Grant (SDWA 1459(I))
- Watershed and Flood Prevention Operations
- Grid Resilience and Innovation Program (GRIP)
- America the Beautiful Challenge
- Aquatic Ecosystem Restoration Grant Program (AERP)
- National Coastal Resilience Fund
- Coastal Zone Management Program – Habitat Protection and Restoration
- Transformational Habitat Restoration and Coastal Resilience Grants
- Thriving Communities Program
- Coastal Habitat Restoration and Resilience Grants for Underserved Communities
- National Fish Passage Program Bipartisan Infrastructure Law: Restoring River, Floodplain, and Coastal Connectivity and Resiliency
- North American Wetlands Conservation Act US Standard Grants





## Post-Disaster Recovery

- Community Development Block Grants – Disaster Recovery (DR)
- FEMA Public Assistance
- National Fish and Wildlife Foundation (NFWF) – Emergency Coastal Resilience Fund (ECRF)
- Nature Based Resilience Solutions – Coastal Areas
- Cybersecurity, Energy Security, and Emergency Response (CESER)
- EDA Disaster Supplemental
- Small Business Association (SBA) Disaster Loans
- Post-Fire Hazard Mitigation Grant Program



- Sustainability and Recovery Coordination
- Economic Development Grants for Public Works and Development Facilities
- FEMA Public Assistance Net Zero
- USACE General Investigation
- Emergency Community Water Assistance Grants
- Public Law 84-99 Emergency Water Assistance
- Emergency Watershed Protection Program (EWP-NRCS)





# Q&A