



# Reviving the Culture of Preparedness

May 11, 2018

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**FIU**

Metropolitan Center

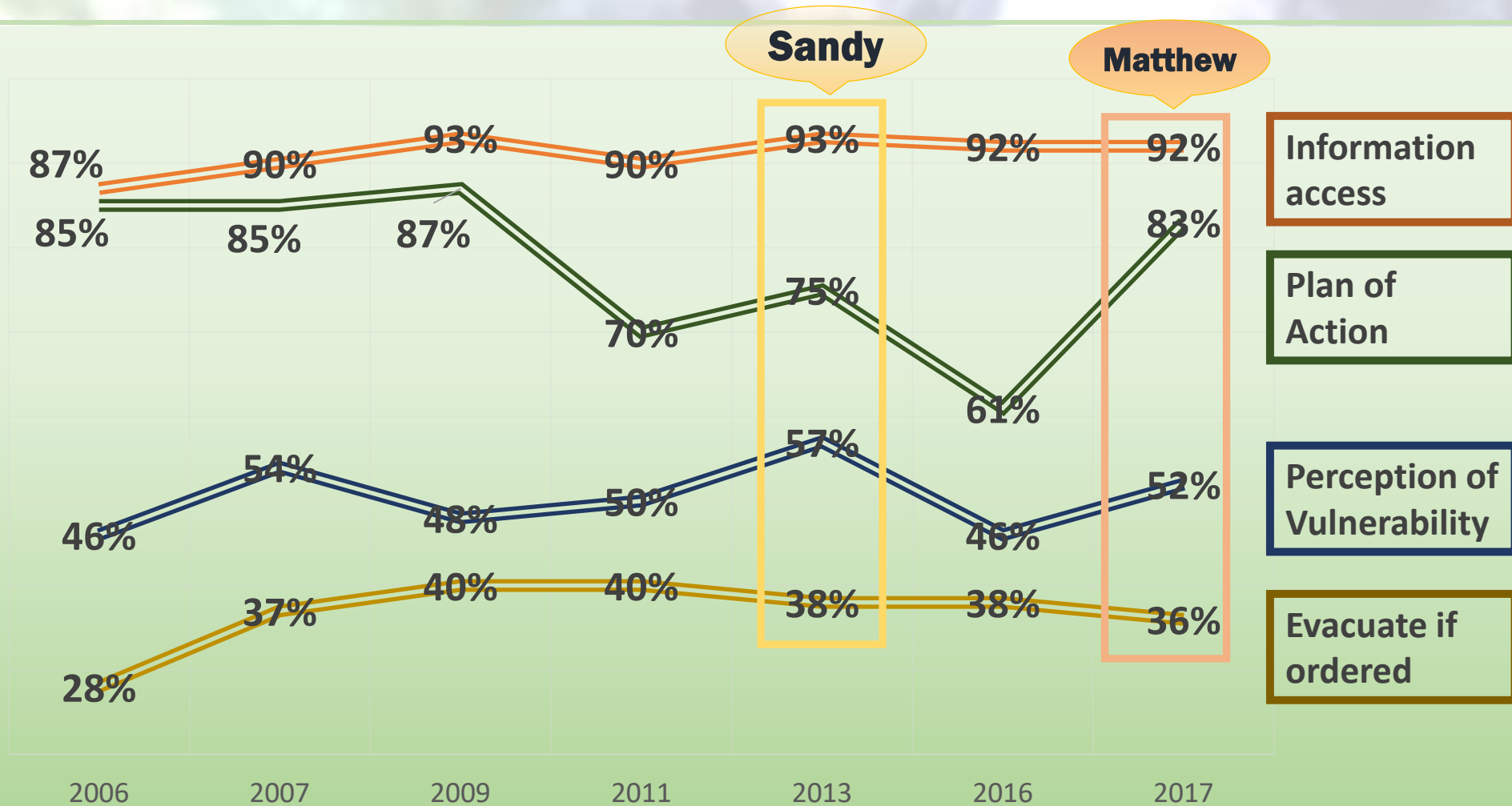


# HOW CAN SOUTH FLORIDA DEVELOP AND SUSTAIN A CULTURE OF PREPAREDNESS AND RESILIENCE ?

- Preparedness - actions and planning taken before a tropical cyclone strikes to mitigate damage and injury (purchase of insurance, purchase of basic supplies, evacuation plan)
- Resilience - strengthening buildings and other infrastructure, and ensuring residents have the proper tools and skill sets to reduce the impact of future disasters.

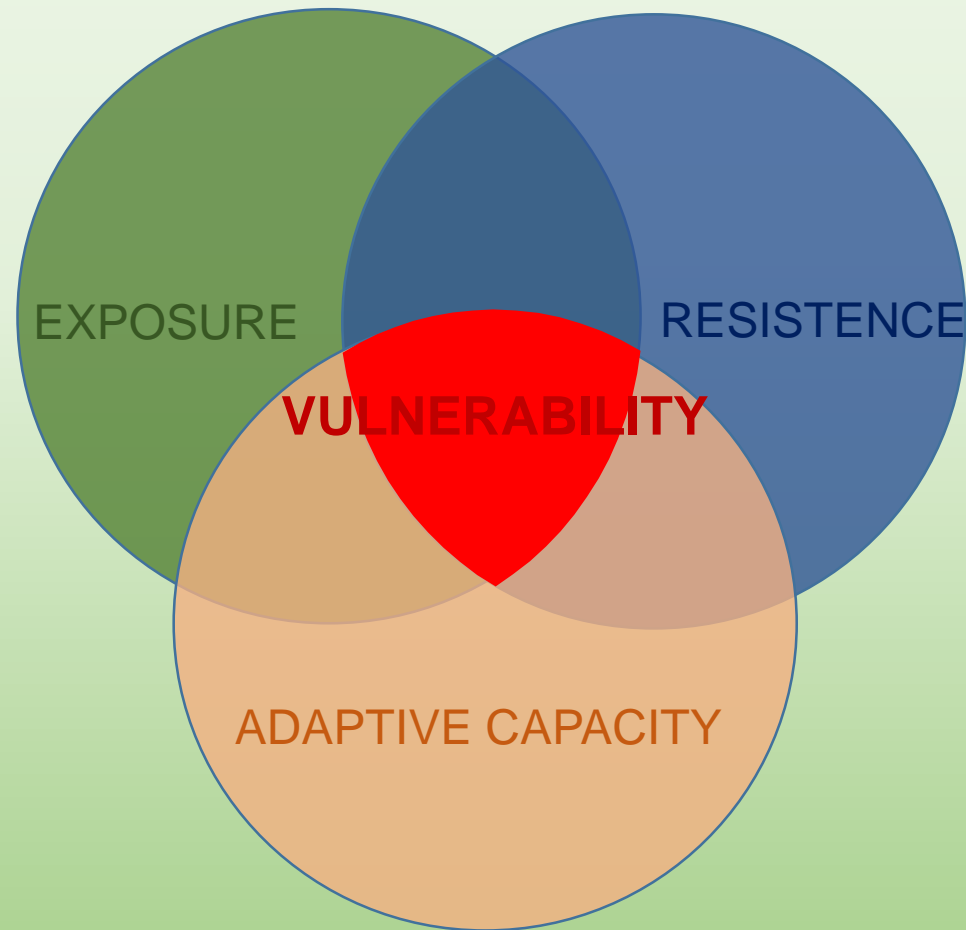


# CULTURE OF PREPAREDNESS?



# VULNERABILITY FACTORS

**VULNERABILITY = EXPOSURE x RESISTANCE x ADAPTIVE CAPACITY**



# Exposure

## OVER THE LAST 60 YEARS...

### POPULATION

- From 4.5 million population in 1958 to 21 million today
- Population density grew from 84.2 to 382 per square mile

1960	2017	Change
Miami-Dade - 935,047	Miami-Dade - 2,743,095	193.4%
Duval - 455,411	Broward - 1,873,970	461.2%
Hillsborough - 397,788	Palm Beach - 1,414,144	520.0%
Pinellas - 374,665	Hillsborough - 1,379,302	246.7%
Broward - 333,946	Orange - 1,313,880	398.6%

# RESISTENCE

## ABILITY TO WITHSTAND DAMAGE

### HOUSING

- 85% of homes in South Florida built prior to 2000
- Average elevation in Miami around 6 ft. above mean sea level
- Impact windows are \$10,000 (condo) to \$20,000 (1,600 sq. ft. house)
- House elevation: \$30-60 per sq. ft.

Properties in Flood or Storm Surge Areas						
MSA	Exposed to Flood or Surge Inundation	In both a SFHA and a Surge Zone	Located only in a SFHA Zone	Located only in a Surge Zone	Total Properties	% Exposed to Flood or Surge
Miami - Ft. Lauderdale	848,023	317,353	283,110	247,560	2,484,604	34.1%
Tampa - St. Petersburg	477,765	198,296	29,775	249,694	1,368,924	34.9%
Cape Coral - Fort Myers	311,373	144,100	1,544	165,729	374,333	83.2%
Sarasota - Bradenton	232,675	84,173	2,786	145,716	407,196	57.1%
Jacksonville - St. Augustine	187,400	30,864	12,355	144,181	610,600	30.7%
Naples - Marco Island	182,645	106,033	2,964	73,648	201,582	90.6%
Daytona Beach - Ormond	108,756	20,533	6,003	82,220	304,710	35.7%

Source: CoreLogic, 2015 CoreLogic Storm Surge Report; analysis by the FIU metropolitan Center



# ADAPTIVE CAPACITY/RESILIENCE

## DEPENDS ON

### Knowledge and Awareness

Information sources  
Temporal and spatial myopia  
Poor mental models of storm risk  
Prior storm experience

### Resources

Housing structure  
Transportation access  
Household income  
Insurance



# RESILIENCE DRIVERS

## ECONOMY

- Only \$240 gain in Florida's average weekly wage from 1959 to 2016
- Incomes in South Florida are stagnant
- One in three households are cost-burdened
- 9% do not own a car in Miami area, 11% in county; 7% in Florida

## KNOWLEDGE AND AWARENESS

- Over 90 percent are certain they have access to all the information they need to prepare

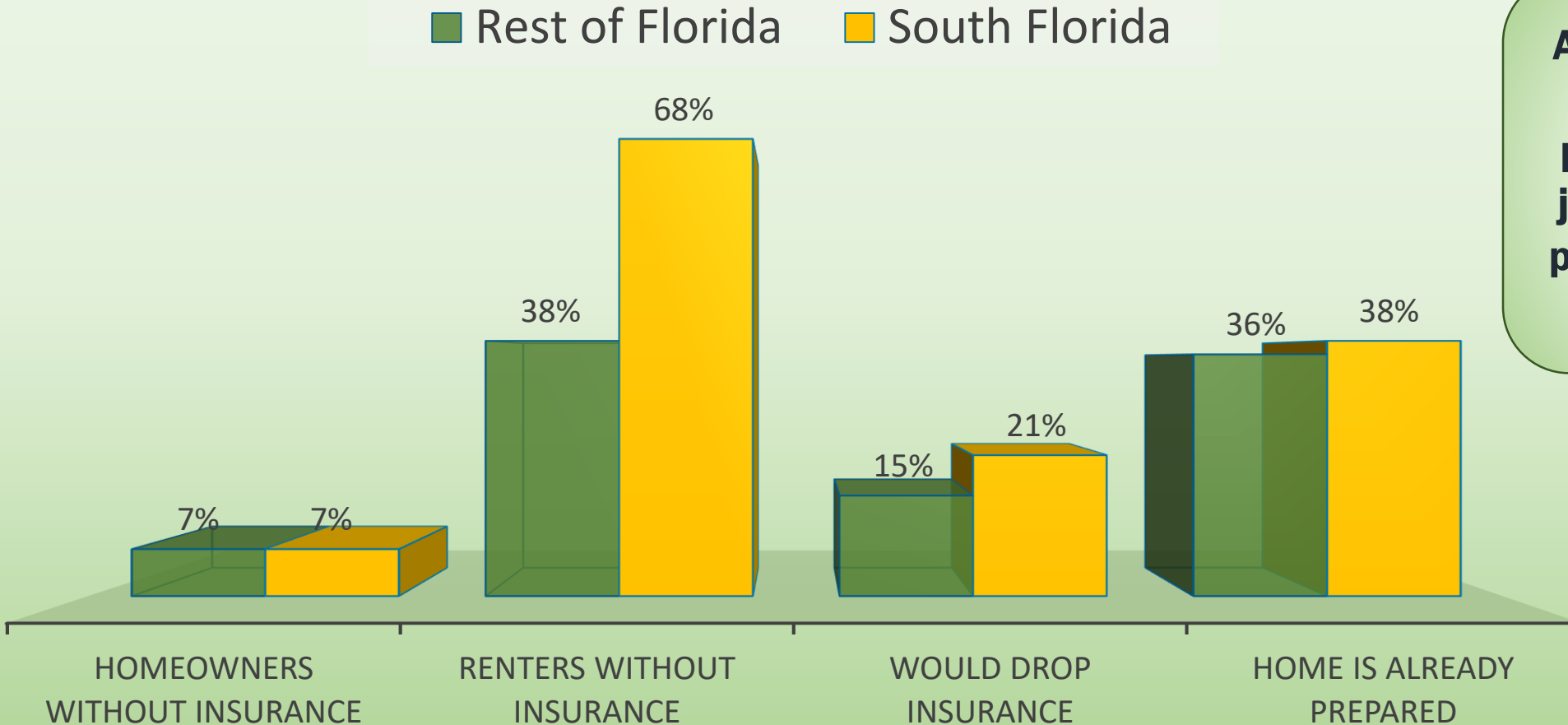
YET....



# CULTURE OF PREPAREDNESS?

	Rest of Florida	South Florida
Information Access	92%	93%
Perception of Vulnerability	50%	55%
Plan of Action	84%	81%
Evacuate if Ordered	35%	38%
Never Evacuate	15%	24%

# CULTURE OF RESILIENCE?



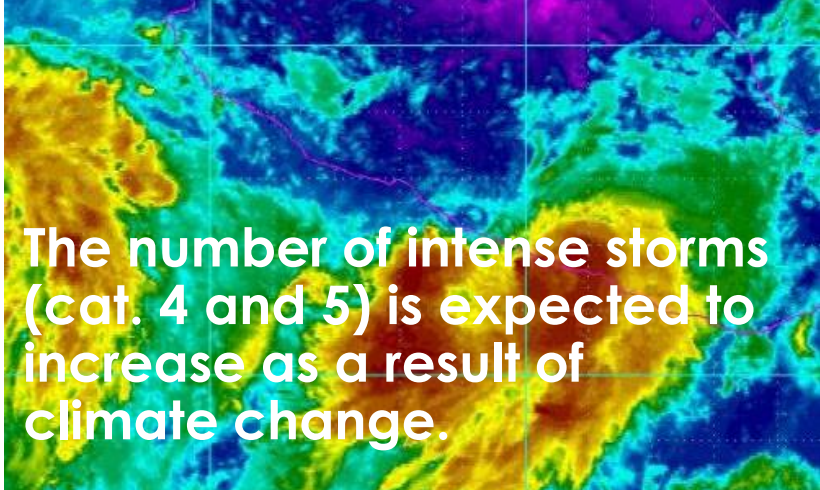
**Although 90% consider their household's preparation adequate, just 51% were actually prepared, and only with the basics.**

# WHERE NATURE AND THE HUMAN FACTORS INTERSECT...



Approximately 80% of the state's population lives in proximity to the ocean.

- South Florida's population is expected to increase by 26%, to 7.5 million in 2040.
- Between 2010-2017, our population increased by 575,000.
- International Migration to South Florida: +514,000; Domestic migration: -64,000
- Over 80% of South Florida businesses are small, and without a business continuity plan.



The number of intense storms (cat. 4 and 5) is expected to increase as a result of climate change.

- Median Insurance rate for a \$150,000 value home, pre-2001 construction w/ No wind mitigation: \$6,800
- Rate for \$300,000 home built in 2005: \$5,300
- Approximately 861,000 homes in high-risk flood areas in Florida's four southernmost counties -- Monroe, Miami-Dade, Broward and Collier – are without flood insurance.



# THE FUTURE?



- Raising risk awareness
- Long-term view/control of urban development in hazardous areas
- Strong building codes with elevation and drainage requirements,
- Careful emergency preparations,
- A good network of roads for evacuation
- FEMA funding for projects aimed at avoiding future losses - elevate properties, build flood barriers, strengthen roofs and windows against high winds, buyouts
- Cost-benefit analysis - reconsider construction on the oceanfront, on barrier islands and in flood-prone areas

**but**

**Development = Revenues**



THANK YOU!

**Hurricane Preparedness Week**  
May 6-12, 2018

