



# COLLABORATING FOR RESILIENCE

A Regional Resiliency Action Plan  
Workshop



# Agenda



9:00 AM

Sign In

9:30

Welcome and Introductions

Resilience 101 and the ECF Regional Resiliency Action Plan

Group Activity #1

Resiliency 201 – The Case for Resiliency and Relative Case Studies

Group Activity #2

Next Steps – Take Aways – Q&A

11:30

Adjourn

# ICE BREAKERS

The Art of Thawing Groups



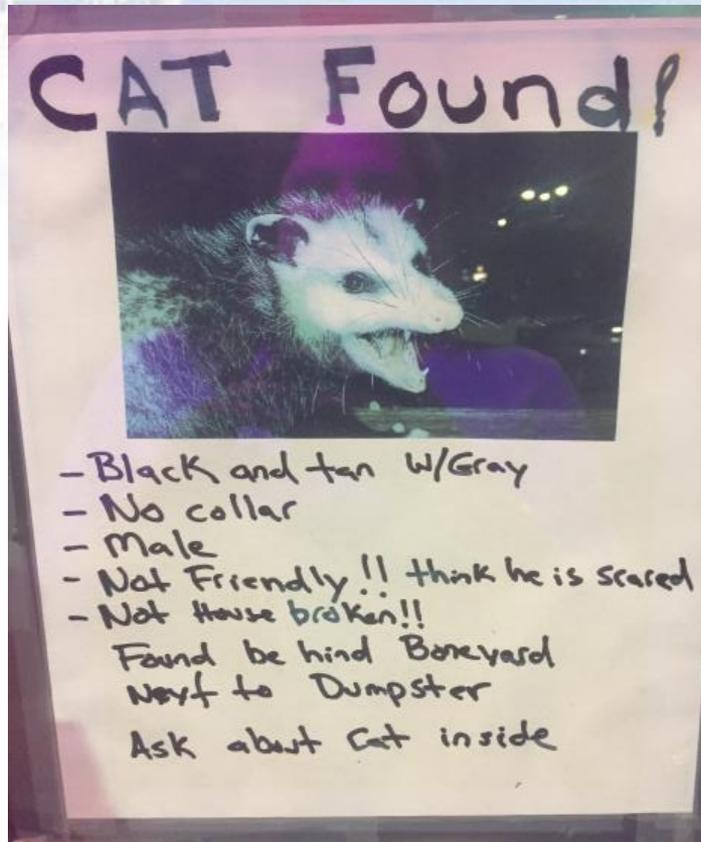
*“What did you learn from Hurricane Irma and how does that tie into long-term resiliency?”*



# Resiliency 101 and the ECF Regional Resiliency Action Plan



# The Facts About Climate Law, Planning & Policy



- Some key regulations, policies and cases
- What's coming up that local governments are facing
- What are we required to start doing?
- Who's doing it (so its not so scary)?
- New directions on climate law and policy



# International Climate Agreements

Agreement	Targets Established	Signatories	U.S. Ratification
United Nations Framework Convention on Climate Change (UNFCCC) 1994, Rio	Voluntary goal of reducing GHGEs from developed countries to 1990 levels by 2000	198 Countries (“Parties”) have signed on and ratified	Treaty and received US Senate ratification
Kyoto Protocol 2005	1st Commitment period: Binding targets to reduce GHGEs 5.2% below 1990 levels by 2012 2nd Commitment period: 18% below 1990 from 2013 to 2020	Focus on “developed” Countries (37 total + EU)- over 120 countries signed	U.S. non-”ratifier”
Copenhagen Accord 2009	4% below 1990 levels by 2020 – not binding. Cuts in emissions required to hold the increase in global temperature below 2 degrees Celsius	114 Parties- Submit individual plans	No U.S. Senate Ratification needed
Paris Agreement December 12, 2015	Global rise in temperature “well below” 2 degrees Celsius + limit increase to 1.5 degrees Celsius (you	196 Countries (developed/non-developed)	Acceptance & approval are both methods to

# The Law: Where Does Climate Change Show Up?

- ESA
- NEPA
- CAA
- CWA
- MMPA
- FOIA/1<sup>st</sup> Amendment
- Energy Policy Act
- Global Climate Change Research Act
- Corporate Reporting/Securities Disclosure
- FTC
- “Cap-and-trade” regulation where GHGE’s are capped and allocated through the distribution of “allowances” representing a right to emit.
- Regulate vehicle standards
- Regulate activities (public and private), failing to regulate or regulating too much
- Green & Energy Building/Codes (New Mexico case)
- Protestors and scientists
- Failure to consider climate in permits
- Money damages and common law claims
- Protect my future



# The Law: Where Does Climate Change Show Up?

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885 Cases as of 6/2018-  
Columbia Law School Tracking  
Database

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# Other Evolving Legal Aspects

## NFIP Reform

- FIRM Existing Flood Risk
- Technical Mapping Advisory Council
- Future flood risk
- Expired 9/30 and reauthorized until 12/8
- Band aid or full reform?

## CRS

- Sea Level Rise Credits ~ 500 pts.
- Mapping
- Improvement of rating score
- Example- County x receives a CRS score of 5, but to improve to a 4, these points are pivotal.

## Corps of Engineers

- Corps "(Engineer Technical Letter 1100-2-1) covering "Procedures to Evaluate Sea Level Change: Impacts, Responses and Adaptation" (July 2014)
- Previous "Incorporating Sea-Level Change Considerations in Civil Works Programs"
- Sea level rise calculator (2017) with 3 scenarios
- Guidance on Inland Climate Change
- Principles for Risk in Planning

## NEPA

- Agency experience and expertise to determine whether an analysis of GHG emissions/climate change impacts would be useful
- "Rule of reason" to ensure that the type and level of analysis is appropriate for the anticipated environmental effects of the project.
- 8/2/16 Guidance- # on GHGEs if feasible & indirect effects
- Early 2017- CEQ directed to withdraw

## FFRMS

- Federal investments implemented through Hazard Mitigation Assistance Grants and the Public Assistance Program
- FEMA grants for construction activities in or affecting a floodplain
- Land, land use, construction for "federal projects"
- Executive Order revoking FFRMS signed 8/15



# Other Evolving Legal Aspects

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## NEPA

- Agency experience and expertise to determine whether analysis is necessary/feasible
- "Rule" to ensure the type and level of analysis is appropriate for the anticipated effects
- 80% of projects are #1 or #2
- Early 2017- CEQ directed to withdraw

## FFRMS

- Federal investments implemented through Hazard Mitigation and Public Assistance
- Federal activities in or near a flood
- Land use, "federal actions"
- Early 2017- CEQ directed to withdraw



# Other Evolving Legal Aspects

- FAST- Fixing America's Surface Transportation Act- 2015
  - "...improve the resiliency and reliability of the transportation system overall..."
  - "...improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation..."
  - "...reduce the vulnerability of the existing transportation infrastructure to natural disasters'..."
- Disaster recovery funds-
  - CDBG-DR, HUD requires an "Action Plan" – "... sound, sustainable long-term recovery planning informed by a post-disaster evaluation of hazard risk, especially construction standards and land-use decisions that reflect responsible floodplain and wetland management and take into account continued sea level rise..."
    - 2' above BFE
    - Critical actions = 500 year floodplain or 3' above 100 year floodplain



# Florida Policy on GHG Reductions and Climate

- EO 07-127: Reduction of emissions to 2000 levels by 2017, to 1990 levels by 2025, and by 80% of 1990 levels by 2050 & California vehicle emission standards reductions (22% by 2012 and 30% by 2016).
- Building Efficiencies/Energy Code, Chapter 553, F.S. increasing standards
- HB 7123: Model Green Building Code (2007)
- HB 697 (GHG reduction strategies in local government's Comprehensive Plan). Some requirements later eliminated.
- HB 7135 (State and Local Government Buildings "greener")
- HB 7179 (PACE)- financing wind resistance/energy efficiency initiatives
- [HB 7207 Adaptation Action Areas \(2011\)](#)
- HB 7117 (Energy Bill- 2012)- increase solar output
- 2015- 5 Bills Passing Related to flood insurance, wind insurance, construction standards/building codes, Citizen's insurance, [Peril of Flood \(SB 1094\)](#)
- 2016- Solar Constitutional Amendments
- 2017- SB 90 on solar disclosures and Amendment 4 Implementation & Natural Hazards coordination



# Adaptation Action Areas

## What are the principle requirements?

- Section 163.3164, F.S.- (1) “Adaptation action area” or “adaptation area” means a designation in the coastal management element of a local government’s comprehensive plan which identifies one or more areas that experience coastal flooding due to extreme high tides and storm surge, and that are vulnerable to the related impacts of rising sea levels for the purpose of prioritizing funding for infrastructure needs and adaptation planning.

Section 163.3177(6)(g)10, F.S.- At the option of the local government, develop an adaptation action area designation for those low-lying coastal zones that are experiencing coastal flooding due to extreme high tides and storm surge and are vulnerable to the impacts of rising sea level. Local governments that adopt an adaptation action area may consider policies within the coastal management element to improve resilience to coastal flooding resulting from high-tide events, storm surge, flash floods, stormwater runoff, and related impacts of sea-level rise. Criteria for the adaptation action area may include, but need not be limited to, areas for which the land elevations are below, at, or near mean higher high water, which have a hydrologic connection to coastal waters, or which are designated as evacuation zones for storm surge.



# Peril of Flood

## What are the principle requirements?

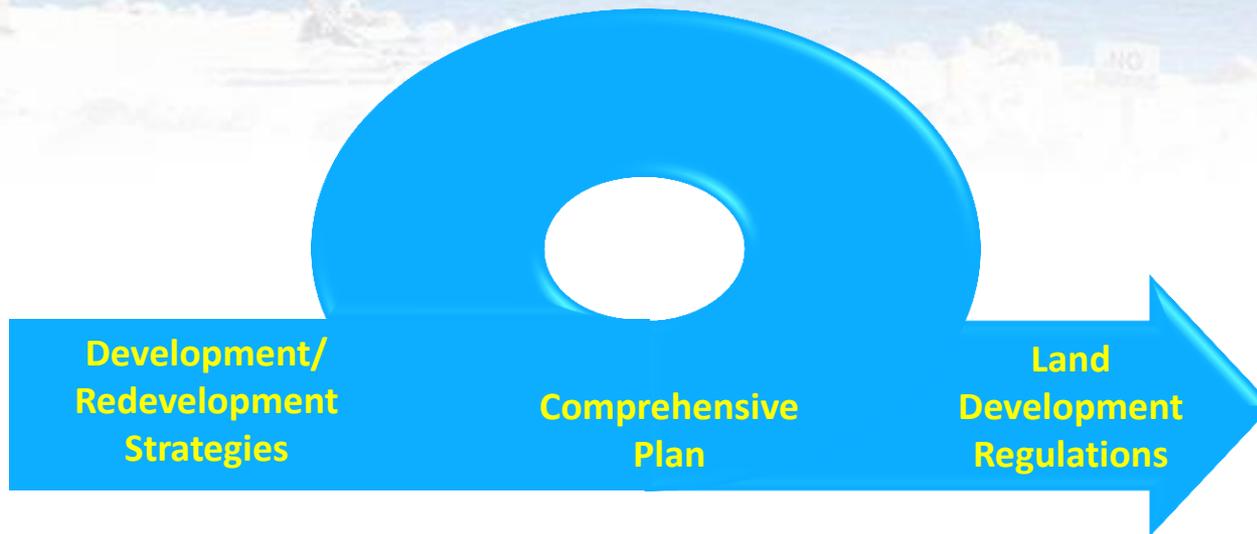
### Section 163.3178, F.S.

- Development and redevelopment principles, strategies, and engineering solutions that reduce flood risks and losses
  - Elevation certificates submitted to DEM
  - “Flexible” flood insurance coverage
  - Other provisions such as flood insurance policy requirements
1. Development and redevelopment **principles and strategies**, that reduce the flood risk in coastal areas from high-tide events, storm surge, flash floods, stormwater runoff, and **the related impacts of sea-level rise**.
  2. **Best practices** for the removal of coastal real property from FEMA flood zones
  3. **Site development techniques** that may reduce losses and claims made under flood insurance policies
  4. Be consistent with, or more stringent than, the flood-resistant construction requirements **in the Florida Building Code** and flood plain regulations
  5. Construction activities consistent with **Chapter 161**.
  6. Encourage local governments to participate in the National Flood Insurance Program **Community Rating System**



# Sample Planning Strategy

How do these requirements relate to or affect planning activities and infrastructure investments in the short- and mid-term?



## Short Term

- Compliance (POF) Strategy (timeline and scope)
- Frame “development”
- Short term capital projects
- AAAs

## Mid Term

- Comp Plan Goals, Objectives and Policies
- Review land uses

## Long Term

- LDRs: Development / design standards
- Areas subject to flooding
- ESLs
- Infrastructure LOS

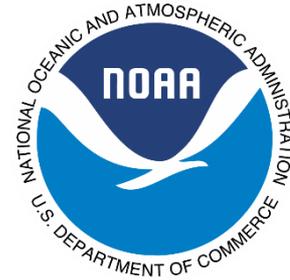


# ECF Resiliency Action Plan Project



## Project Goals:

- Increase local and regional stakeholders resiliency and climate adaptation capacity
- Engage stakeholders
- Obtain support for adoption of the action plan



# Oversight



Agency	Agency
Brevard County GIS	Indian River Lagoon Council
Brevard County Planning	Kennedy Space Center/NASA
Brevard County Public Works	League of Women Voters Sustainability Committee
Brevard Emergency Management	NOAA
Brevard Natural Resources	Patrick Air Force Base
Canaveral Port Authority	River to Sea TPO
City of Cape Canaveral	Sea Grant
City of New Smyrna Beach	SJRWMD
City of Satellite Beach	Space Coast TPO
Deady Law	Stetson University
East Central Florida Regional Planning Council	UF Geoplan
FEMA	UF IFAS Volusia and Brevard
Florida Department of Economic Opportunity	USACE
Florida Department of Environmental Protection	Volusia County Emergency Management
Florida Department of Health Brevard	Volusia County Growth Management
Florida Department of Health Volusia	Volusia County Stormwater
Florida Department of Transportation	Volusia County Sustainability and Natural Resources
Florida Fish and Wildlife Commission	Volusia County Traffic Engineering
Florida Institute of Technology	Volusia County Water Resources and Utilities

# Definition



Go to [www.menti.com](https://www.menti.com) and use the code **27 79 06**

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 Mentimeter

## What does resilience mean to you?

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# Definition



## RESILIENCY:

The capacity of individuals, communities, institutions, businesses, and systems within a region to plan, sustain, adapt, recover, improve and grow collaboratively—regardless what kind of **chronic stresses** and **acute shocks** they experience – through specific actions and implementation strategies geared to address specific vulnerabilities.

(adapted from 100 Resilient Cities for the Regional Resiliency Action Plan )

# Definitions



**Acute Shock** –Sudden, single disaster events that threaten a community.

## What are acute shocks?

- Earthquake
- Wildfires
- Flooding
- Sandstorms
- Extreme cold
- Hazardous materials accident
- Severe storms and extreme rainfall
- Terrorism
- Disease outbreak
- Riot/civil unrest
- Infrastructure or building failure
- Heat wave

100 RESILIENT CITIES

# Definitions

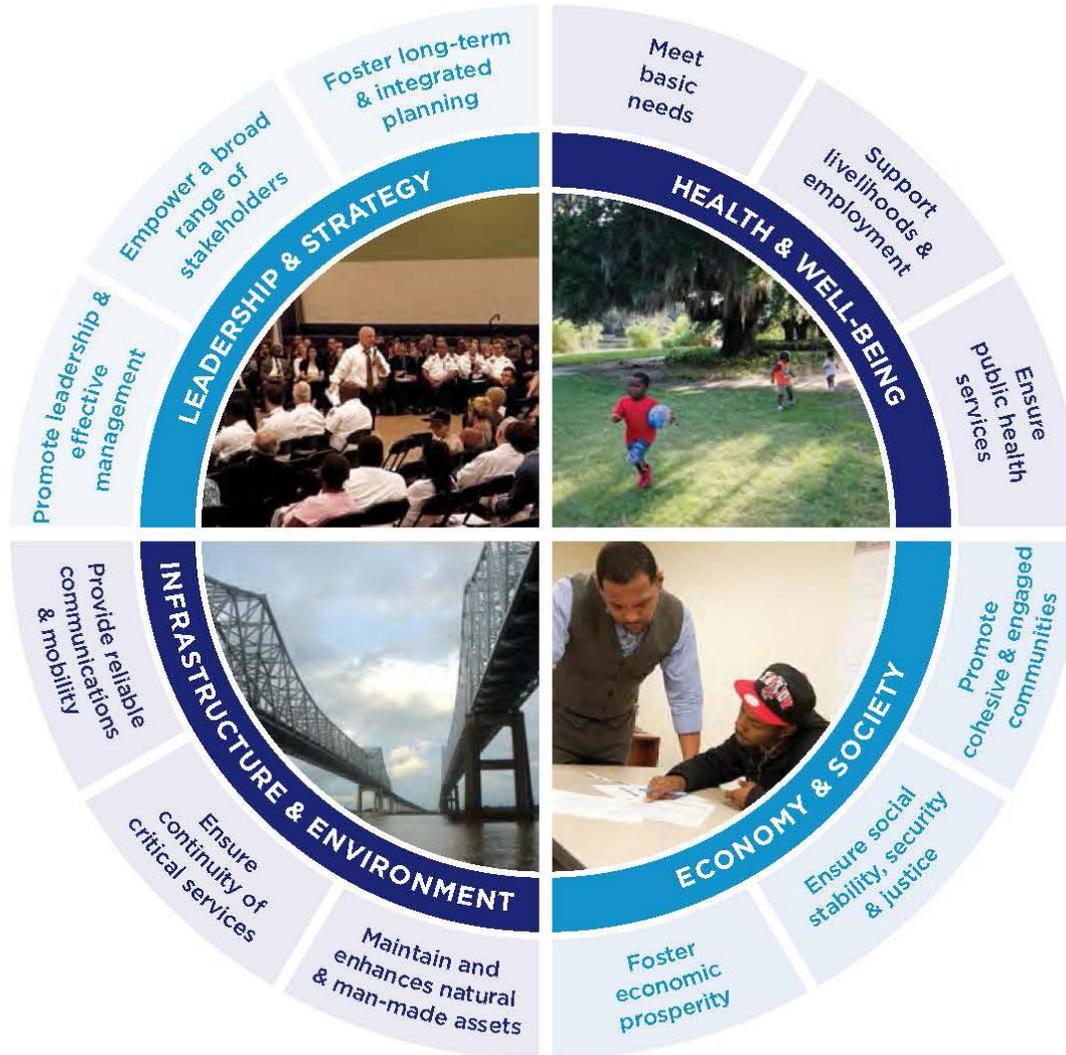


**Chronic Stressor** –Reoccurring pressures that weaken the fabric of the community.

## What are chronic stresses?

- Water Scarcity
- Lack of affordable housing
- Poor air quality
- High unemployment
- Homelessness
- Changing demographics
- Lack of social cohesion
- Poverty/inequity
- Aging Infrastructure
- Shifting macroeconomic trends
- Crime & violence

# Framework



# Goals



## *Overarching*

Increase the ability of local and regional stakeholders to implement resiliency and climate adaptation strategies across disciplines.

# Goals



## **Leadership and Strategy:**

Promote leadership, education and empowerment both in government, and public and private sectors to foster the implementation of resiliency strategies across disciplines and communities.



# Goals



## **Economic and Society:**

Provide opportunities and strategies to foster economic prosperity and improve social equity and justice in preparation for and recovery from stressors and shocks.

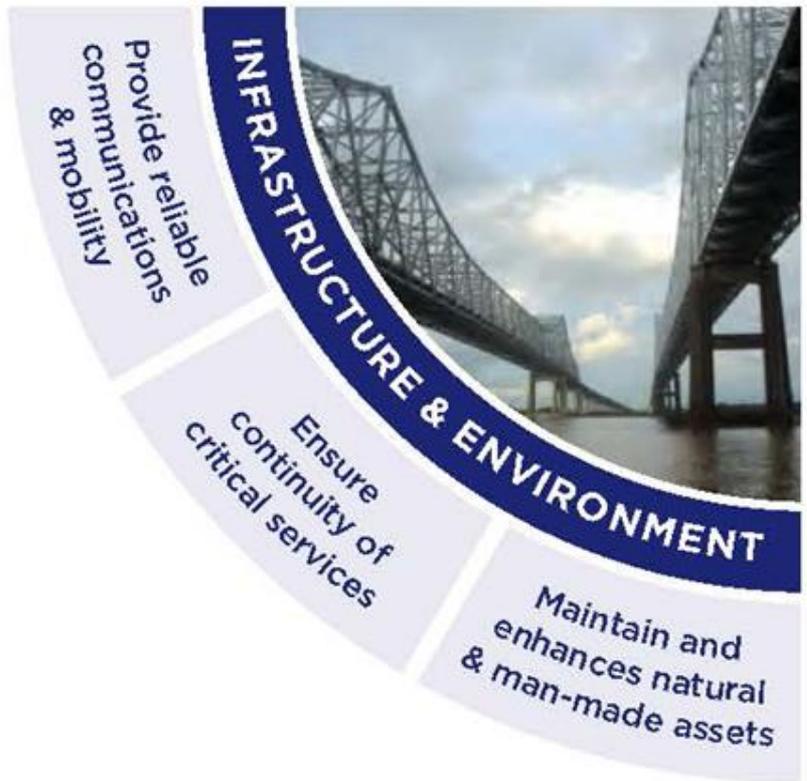


# Goals



## **Infrastructure and Environment:**

Create cross-discipline plans, policies and strategies to develop infrastructure, natural resources and a built environment that can withstand and adapt to natural disasters, changes to climate, and human manipulation to protect the health, safety and economic welfare of residents, businesses and visitors.



# Goals



## Health and Wellbeing:

*Create sustainable, resilient and healthier communities, programs and opportunities for all to better respond to disaster and adapt to climate and social stressors and shocks.*



# Stakeholder Engagement



## Plan and Policy Resiliency Integration Survey Summary 2018

Regional Resiliency Action Plan  
East Central Florida Regional Planning Council



Conducted survey to provide insight into the progress of integrating resiliency into various local and regional plans and policies.

### Who responded to the survey?

29 respondents

Local Governments	Agencies
City of Satellite Beach	FDOT
Volusia County	Space Coast TPO
Volusia County Emergency Management	River to Sea TPO
Volusia County Growth and Resource Management	Canaveral Port Authority
City of Rockledge	SJRWMD
City of Titusville	Indian River Lagoon Council
City of Ormond Beach	FDOT – District 5
City of Cape Canaveral	Department of Economic Opportunity
Brevard County Natural Resources Management Department	University of Florida IFAS Extension
Town of Melbourne Beach	Brevard County
City of Cocoa	East Central Florida Regional Planning Council
New Smyrna Beach	NASA Kennedy Space Center
City of Indian Harbour Beach	
City of Orange City	
County of Volusia	

# Stakeholder Engagement



The Listening Sessions took place on May 7<sup>th</sup> in Volusia County and on May 8<sup>th</sup> in Brevard County.

*Collaborating for Resilience & Building Economic and Social Resilience Listening Session*



# Stakeholder Engagement



Go to [www.menti.com](https://www.menti.com) and use the code **27 79 06**

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Let us know your views by rating the following statements from 1 (lowest) to 10 (highest).

Strongly disagree

Resiliency is important to my organization/community.

My community/organization is proactive in planning for vulnerabilities.

Funding is a major barrier for planning for vulnerabilities.

Strongly agree



# Stakeholder Engagement



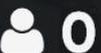
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## How would you prioritize these statements given 100 total points?

- 0% Educate the elected officials and stakeholders about all aspects of resiliency.
- 0% Specifically budget for solutions for long-term and future impacts
- 0% Increase the manufacturing labor pool and skills to include new technologies.
- 0% Assess infrastructure and plans for vulnerabilities to future conditions.



# Stakeholder Engagement



Go to [www.menti.com](http://www.menti.com) and use the code **27 79 06**

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## Any questions for the presenters?

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# Group Activity #1



Using the poster on the table, and the input from the presentation, review the priorities of each section, and determine the top 2-3 priorities to address through the action plan to further resiliency in the region.

Add a priority if one is missing.

15 Minutes

Add additional comments or priorities where necessary.



# Resiliency 201

The Case for Resiliency and Relative Case Studies



# Katrina Liability- Corps & Temporary Takings (St. Barnard Parish v. US)

- Corps not liable on appeal in separate litigation (sovereign immunity)
- Case originally filed 2005. Federal judge (5/1/15) rules that Corps' construction and absent maintenance of MRGO created a "temporary taking" under the 5<sup>th</sup> Amendment
- MRGO contributed to increased **salinity** and loss of **habitat**, including wetlands, eroding **natural protection** and increasing **flooding risk**
  - "Certainly by 2004, the Army Corps had no real choice but to recognize that a hurricane inevitably would provide the meteorological conditions for **the ticking time bomb** created by a substantially expanded and eroded MR-GO and the resulting destruction of wetlands that had shielded the St. Bernard Parish for centuries," Braden wrote
- May 4, 2016 Judge rules that Corps' liability for lost property values in St. Bernard Parish and the Lower 9th Ward of \$3.16 million plus interest to six landowners (temporary taking)
- Appeal July 6, 2016 by Justice (to U.S. Court of Appeals for the Federal Circuit), relying heavily on: *Arkansas Game and Fish Commission v. United States* (2012), USC holds that it's possible for government-induced, temporary flooding to constitute a "taking" of property under the Fifth Amendment to the U.S. Constitution, such that compensation could be owed to the owner of the flooded property.



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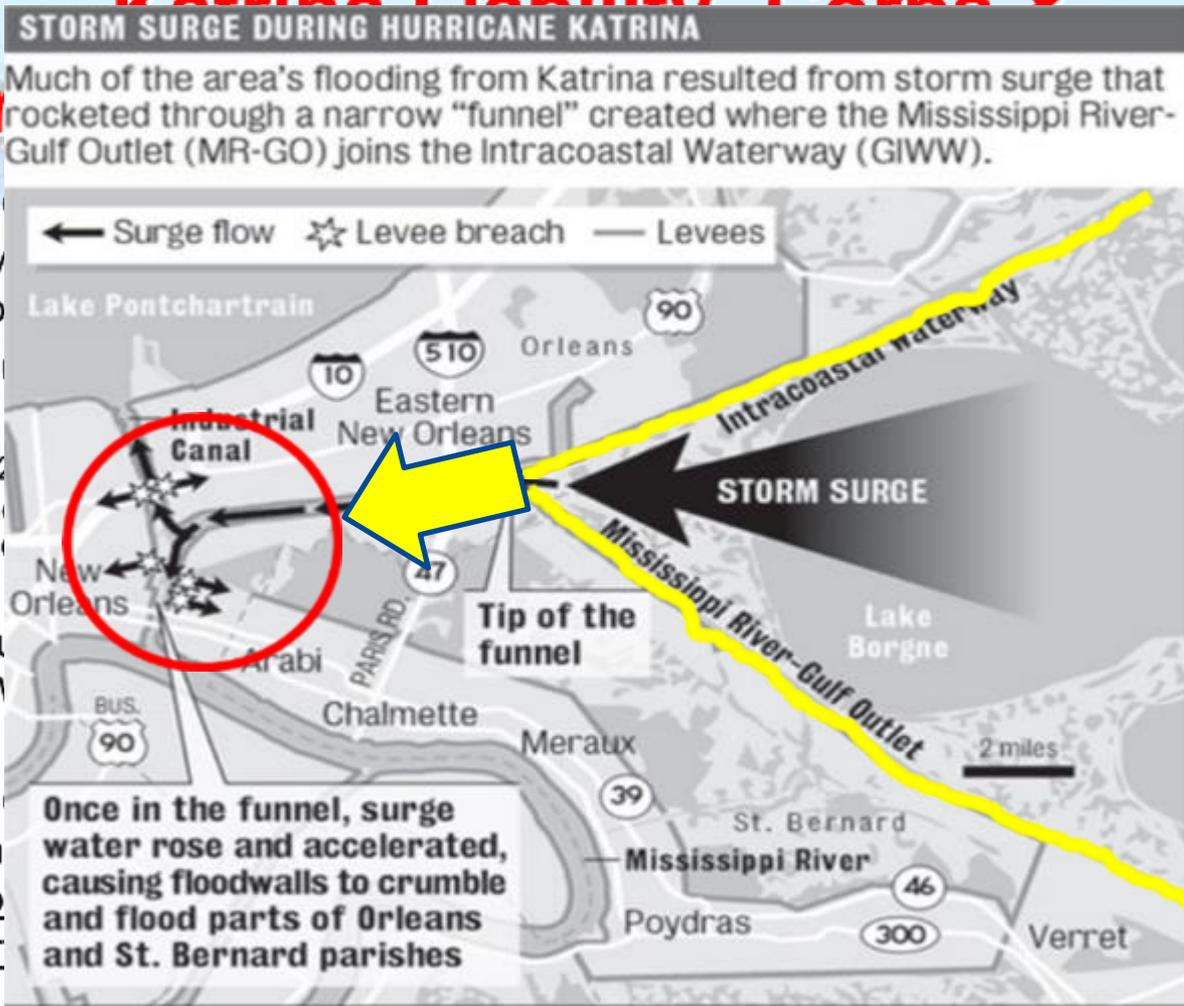
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# Katrina Liability: Corps v. US

## Temporal

- Corps not liable
- Case originally dismissed for lack of maintenance of
- MRGO contributed to **protection** and
  - "Certainly by 2005, the Corps should have provided the maintenance and repair of the eroded MR-GO. As Judge Braden wrote in the 5th Circuit decision:
- May 4, 2016 Judge Braden ruled in favor of the Lower 9th Ward
- Appeal July 6, 2016. The Supreme Court ruled in favor of the Corps on: Arkansas v. Environmental Protection Agency for government's failure to comply with the Amendment to the Clean Air Act for flooded properties



## Corps v. US

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# Damages Judgment Tossed

- U.S. Court of Appeals for the Federal Circuit tossed the award of damages by U.S. Court of Federal Claims
- The appeals court found that the suit was based solely on the damaging effects of the MR-GO, a 72-mile shortcut connecting the Gulf of Mexico to the Industrial Canal in downtown New Orleans.
  - The channel was closed with a dam in 2009.
  - The appeals court ruled that the arguments never considered whether the levee built by the Corps before Katrina either had a direct role in the flooding or reduced the flooding.
  - Therefore, the lower court ruling was based largely on the failure of the Corps to take actions to reduce the effects of the MR-GO, rather than on actions the Corps did take
- “We conclude that the government cannot be liable on a takings theory for inaction and that the government action in constructing and operating MRGO was not shown to have been the cause of flooding”



# Damages Judgment Tossed

- U.S. Circuit Court of Appeals for the Fifth Circuit has tossed a federal court judgment awarding \$1.2 billion in damages to the state of Louisiana for the flooding of the New Orleans area by Hurricane Katrina.
- The appeal was filed by the state of Louisiana, and the federal court had ruled in favor of the New Orleans area residents.
- The federal court had ruled that the state of Louisiana was responsible for the flooding of the New Orleans area by Hurricane Katrina.
- The federal court had ruled that the state of Louisiana was responsible for the flooding of the New Orleans area by Hurricane Katrina.
- “We can’t let the government off the hook for the damage it caused,” said a representative for the state of Louisiana.



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# Borough of Harvey Cedars v. Karan

- 3 story beach front home v. 22' barrier dune protection project
- Without project Karans had 56% chance of storm damage (over 30 years), with it, had 200 year “protection life”
  - Karans sought to exclude testimony on benefits
- Court determines “just compensation” when a portion of private property is taken for a public project – how do you calculate the “benefits”?
  - Benefits are general or special
- Trial jury awarded \$375k in just compensation (upheld at appellate level)
- NJ Supreme Court says erroneous valuation-- look at FMV before and after project (consider testimony on benefits)
- Reverse and remand- so what did they get???????



# Borough of Harvey Cedars v. Karan

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# \_\_\_\_ Plaintiff v. Fossil Fuel Companies

- Kivalina- Nuisance claim for \$ from the energy industry for flooding damage caused by climate change.
- Connecticut v. AEP- Congress had entrusted EPA in the first instance to decide how GHGs should be regulated, and that it was not for the federal courts to issue their own rules
- Comer v. Murphy Oil- MI Fed Court finds claims preempted by the Clean Air Act and plaintiffs could not demonstrate that their injuries caused by the companies' conduct (nuisance / trespass claims damage property in Katrina).
- San Mateo County, Marin County and the City of Imperial Beach v. Chevron- (37 D's) public nuisance, failure to warn, design defect, private nuisance, negligence, and trespass- **they knew and hid it and now....** they need to pay, both for the costs the local governments are incurring to adapt to sea level rise and for the companies' own willful, deceptive, and malicious behavior (filed 7/17/17)
- ...“coordinated, multi-front effort” to “discredit the growing body of publicly available scientific evidence and persistently create doubt.”



# Plaintiff v. Fossil Fuel Companies

- Kivalina- Nuisance claim for \$ from the energy industry for flooding damage caused by climate change
- San Mateo County, Marin County and the City of Imperial Beach v. Chevron- (37 D's) public
- Connecticut entrusted E decide how and that it v to issue the
- Comer v. M finds claims Act and pla that their in companies trespass claims damage property in Katrina).

USSC in Kivalina- if an individual driving a car (and thus contributing to emissions) could also be a defendant, how can a court determine who was liable?

- Causation v. "substantial factor"
- Vulnerability assessments as evidence?

evidence and persistently create doubt."

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# City of Oakland v. BP

- Chevron Corporation, Exxon Mobil Corporation, BP plc, Royal Dutch Shell plc, and ConocoPhillips are the five largest investor-owned producers of fossil fuels in the world
- Plaintiffs (State of CA, San Mateo, Imperial Beach, etc.) file public nuisance claim that FF Co's activity unreasonably interferes with the use or enjoyment of public rights and thereby causes the public-at-large substantial and widespread harm. *Native Vill. of Kivalina v. ExxonMobil Corp.*, 696 F.3d 849, 855 (9th Cir. 2012) (citing *Missouri v. Illinois*, 200 U.S. 496, 521 (1906)). No plaintiff has ever succeeded in bringing a nuisance claim based on global warming.
  - Single claim of public nuisance under CA law- everyday sales of fossil fuels, leads to combustion, leads to CO2 in atmosphere, + awareness that GHGs lead to increased global temperatures = public nuisance. Motion filed to relate cases to San Mateo.
- **Plaintiff's seek \$\$\$ to pay for adaptation activities (which court finds premature) through an abatement funds (which court finds uncertain).**
- On 6/25/18 court finds on MTD- "The Court will stay its hand in favor of solutions by the legislative and executive branches".



## California's war on fossil fuel companies just failed

June 28, 2018

But a judge ruled the science is still correct.

E.A. CRUNDEN JUN 28, 2018, 11:26 AM

SHARE



## land v. BP

...n, BP plc, Royal Dutch Shell plc, and ...vned producers of fossil fuels in the world ...each, etc.) file public nuisance claim that FF use or enjoyment of public rights and thereby spread harm. Native Vill. of Kivalina v. ... . 2012) (citing Missouri v. Illinois , 200 U.S. ... ded in bringing a nuisance claim based on

everyday sales of fossil fuels, leads to combustion, GHGs lead to increased global temperatures = San Mateo.

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ll stay its hand in favor of solutions by the



# Post Storm Litigation: Why Its Important

## Flooded homeowner sues bank for recommending he reject flood insurance

By L.M. Sixel | October 2, 2017



Deola Ali bought a house in Kingwood six years ago and considered buying flood insurance. Instead, he says, he followed the advice of his mortgage lender, which said he didn't need flood insurance because the property wasn't in a flood plain.



# Ali v. JP Morgan Chase Bank

- Homeowner received mortgage financing advise, home insurance advise. Allegation: Negligent, unlawful advice on the lack of need for flood insurance. Theory: Homeowner relied on Chase's wrongful advice leading to a "foreseeable injury".
- Filed 9/23/17 in U.S. District Court Southern District of Texas, Trial set for 2/18/19.
- Claims of Negligence, Negligent Misrepresentation, and Strict Liability in Tort.



# Basic State Legal Concepts in Government Actions/Liability for Capital Improvements and Roads

But wait, there's one more thing to consider... government inaction (*Jordan v. St. John's County*)...

1. What is the maintain v. upgrade obligation?	Generally cases have found there is a duty to “maintain” (roads) but <b>no duty to “upgrade”</b> . There is no direct case on duty to maintain or upgrade <u>from sea level rise</u> yet...
2. What actions can be taken or not? Planning versus operations.	Duty to maintain or upgrade due to sea level rise could depend on whether road design decisions are deemed “ <b>discretionary planning</b> ” actions or “ <b>non-discretionary operations/maintenance</b> ” actions.
3. Why is planning versus operation important?	Once you build it, you must <b>maintain it with “reasonable care”</b> to function as designed (now it becomes a non-discretionary operations).
4. Sovereign Immunity	<b>Discretionary planning</b> decisions are immune from liability under the Tort Claims Act. Cases have held there is <b>no liability for failure to build</b> , expand or modernize capital improvements, cases have deemed these “planning” actions (road widening). Nor liability for basic design of roadway and decision on whether or not to upgrade (planning level).



# Example Planning Efforts Around the State

Jurisdiction	Activity
West Coast Southeast Florida	Regional Collaboration and involvement of regional planning councils
Broward	Enhanced modeling: seawall heights and future conditions groundwater maps
Miami Beach	Stormwater pumps, road elevation, resilient/green building req's and <b>seawall policy</b>
Ft. Lauderdale	AAAs (19), <b>seawall ordinances for design criteria</b>
Monroe County	Road elevation policy accounting for sea level rise and demonstration projects & SLR Modeling through CRS (to achieve "4" rating)
East Central FL	Satellite Beach- HAZUS modeling and plan development (new Volusia and Brevard initiatives)
St. Augustine	Historic properties, post-Matthew infrastructure and planning
Multiple Cities/Counties	Sustainability/Climate/Vulnerability planning initiatives (Central FL, West Coast, South Florida)
DEO	Pilot / demonstration vulnerability analyses in 3 communities
Non-Coastal	Sunrise- Sustainability planning and vulnerability analysis ( <b>tie to coastal structures</b> )
Yankeetown	AAAs based on natural areas to transition and serve as "coastal barriers"

# Case Study: Monroe County



Monroe County official talks about the program to raise the roads in the Florida Keys after Hurricane Irma flooded the area this past September. **Charles Trainor Jr.** - Miami Herald

ENVIRONMENT

## Keys to raise roads before climate change puts them underwater. It'll be expensive.



BY ALEX HARRIS  
[aharris@miamiherald.com](mailto:aharris@miamiherald.com)



February 01, 2018 07:00 AM  
Updated February 02, 2018 03:18 PM

- Climate/Sustainability Plan “GreenKeys”
- Pilot Roads Analysis to address King Tide Flooding in two neighborhoods
  - Adopted interim road design standard
  - Allocated funds to begin projects
  - Currently launching design
- NOAA Grant recipient to complete disaster flood analysis (using HAZUS)
- Countywide elevations of roads and critical facilities
- Begin countywide roads analysis linking vulnerability and capital planning





Studies underw



1:05

Monroe County officials  
area this past Septem

ENVIRONMENT

# Keys to change expens

BY ALEX HA  
afarris@w  
February  
Updated

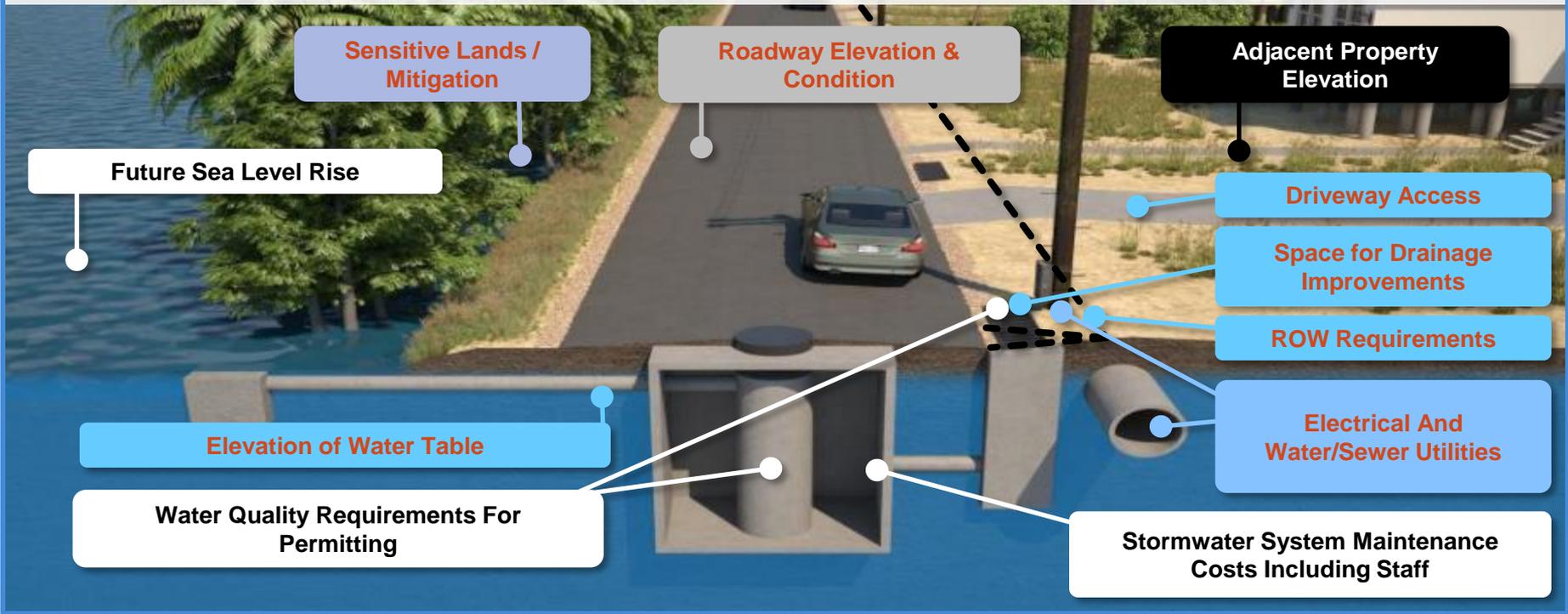


an  
address King  
neighborhoods  
and design  
begin projects  
design  
complete  
using  
of roads and  
analysis  
capital



# Road Elevation Considerations

## LOCAL CONDITIONS AFFECTING FINAL DESIGN RECOMMENDATIONS



# Monroe County: Road Design Methodology

Final Roads Report: Appendix 1 narratively describes the steps in the process so they can be applied in other areas	Tidal datum based on current tidal epoch MHHW (NAVD88)	Elevation addition to not exceed 7 days of flooding annually based on 2015 sea level	Sea level rise estimate using IPCC AR5 Median (2015 to 2040)	Resulting target minimum elevation for roads (2040)** (NAVD88)			
<b>Sands Community</b>	-1.1"	+	6.0"	+	5.4"	=	10.3"
<b>Twin Lakes Community</b>	-7.0"	6.0"	5.4"	4.4"			

The negative values are in relation to the NAVD88 datum, where zero is a point approximately equal to the low point of the roadways in the two communities.



# Initial Results – Conceptual Cost Estimates for Design Scenarios

	Twin Lakes – Key Largo		Sands Community – Big Pine	
Elevation	Length of Roadway Elevated	Total Roadway <u>and</u> Drainage Cost	Length of Roadway Elevated	Total Roadway <u>and</u> Drainage Cost
6"	0.25 miles	\$0.92 million	0.3 miles	\$2.22 million
12"	0.7 miles	\$4 million	0.35 miles	\$2.63 million
18"	0.8 miles	\$5.8 million	1.3 miles	\$8.9 million
28"	0.9 miles	\$7.3 million	1.5 miles	\$10.5 million

Costs factored in: Maintenance of traffic, mobilization, design, construction, 15% of costs for construction engineering and inspection, 25% contingency and stormwater features.

Costs not factored in: right-of-way (~12" is threshold), driveway improvements



# Public Trust Theories- Juliana v. U.S.

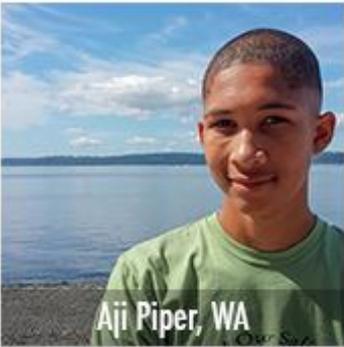
- Plaintiffs- young people ages 8-19, Earth Guardians and Dr. James Hansen (acting as guardian)
  - Allegations- fossil fuels burn carbon, U.S. allowed emissions to get out of control and they sought: (1) a declaration their constitutional and public trust rights have been violated and (2) an order enjoining defendants from violating those rights and directing defendants to develop a plan to reduce CO<sub>2</sub> emissions
- Defendants – US, DOE, EPA, OMB, etc. filed M2D
- Trial: October 29, 2018



# Public

# . U.S.

- Plaintiffs- Dr. James Hansen  
– Allegations that EPA  
get out of court  
constitute an order  
directing emissions  
• Defendants  
• Trial: October 2022



Aji Piper, WA



Hazel Van Ummersen, OR



Xiuhtezcatl Martinez, CO



Sahara Valentine, OR



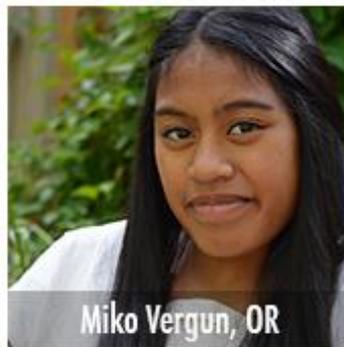
Levi Draheim, FL



Victoria Barrett, NY



Nick Venner, CO



Miko Vergun, OR



Journey Zephier, HI

Indians and  
emissions to  
on their  
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rights and  
02

M2D



# M2D = DENIED → Commence Discovery

- 11/10/16 – “This lawsuit is not about proving that climate change is happening or that human activity is driving it.

For the purposes of this motion, those facts are undisputed. Questions before the Court:

- 1) whether D’s are resp
  - 2) whether P’s may chall
  - 3) whether this Court can powers doctrine.
- Motion for interlocutory appeal without prejudice.
  - Petition for a writ of mandamus United States (7/5/18) & US S application for stay, preserving Court also denied the govern court hears all of the facts tha



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irt, and  
out violating the separation of  
or writ of mandamus denied  
discovery and trial filed by the  
deral administration’s  
e of October 29, 2018. The  
re case before the district



# Reynolds v. FL

- State of Florida (Rick Scott), DEP, DACS, Board of TIITF and PSC
- Filed 4/16/18, 2d Circuit, 8 youth plaintiffs aged 10-19
- Claims: Constitutional and common law public trust obligations to protect Plaintiffs' inalienable and fundamental rights secured by Florida common law and Article I, Sections 1, 2 and 9; Article II, Sections 5, 7(a), and 8; and Article X, Sections 11 and 16 of the Florida Constitution
- Public trust resources = atmosphere
- State's energy policies (FFs & GHGs) violate public trust doctrine
- Remedies sought:
  - GHG Inventory
  - Prepare and implement an enforceable comprehensive statewide remedial plan to stabilize climate system and protect natural resources
- Motion to Dismiss filed by all Defendants 7/6/18 (political question, etc.)



# Reynolds v. FL

- State of Florida (Defendants) DEF. DAVID B. LEE (STATE ATTORNEY)
- Filed
- Claim  
Plaintiff  
and  
Article
- Public
- State
- Remedies
  - Government
  - Prepare and implement an enforceable comprehensive statewide remedial plan to stabilize climate system and protect natural resources
- Motion to Dismiss filed by all Defendants 7/6/18 (political question, etc.)



aw



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November, 2017 Volume 91, No. 9

[Journal HOME](#)

## Why the Law of Climate Change Matters: From Paris to a Local Government Near You

by Erin L. Deady

Page 54



Climate change has received much national attention recently, but the laws, regulations, issues, and caselaw evolution, have a history that is not well known. International strategies are one important element in solving the climate change challenge. Impacts locally such as street flooding, compromised drainage, habitat and species changes, accountability, and liability confluence bring a new reality to the importance of understanding what is being done, or not done, at all levels of government. This article summarizes the climate change law highlights at the international, state, and local levels and provides insight as to why it matters.



# Update on the Legal and Planning Issues of Climate Change Facing Florida

by Erin L. Deady

Without tracing a complete history back to approximately 2006, the State of Florida has had a relationship with climate change, sea level rise (“SLR”), and greenhouse gas (“GHG”) management longer than most might think. For this overview, the focus is on recent advancements in state law and local strategies utilized across the state. Local governments continue to be on the frontlines of navigating these concepts. One thing is clear, the law surrounding climate change, flooding, and adapting to changing future environmental conditions are principles that are not going away.

efficiency and emissions.<sup>3</sup> Another piece of legislation addressed issues such as green building, efficient land use patterns, energy conservation, GHG emissions in planning, and prompted the Florida Building Commission to make recommendations on energy efficiency, among other provisions.<sup>4</sup>

Within the current state administration, agencies are still working on climate change related issues. This administration has focused more on technical assistance to local governments and emergency management

guides and compilations of resources for local governments that want to start addressing SLR in their policy framework.<sup>7</sup> Most recently, the Florida Department of Environmental Protection has formed the Florida Resilient Coastlines initiative, awarding an initial wave of grant funding to local governments for coastal adaptation and resiliency planning. In addition, the Department will continue its Coastal Partnership Initiative grant program, which funds some resiliency projects implemented by local governments.<sup>8</sup>



# Example Legal Issues & Challenges for Local Governments Building Resilience



Thomas Ruppert  
Coastal Planning Specialist

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November, 2013 Volume 87, No. 9

## **Drowning in Place: Local Government Costs and Liabilities for Flooding Due to Sea-level Rise**

by Thomas Ruppert and Carly Grimm

- No duty of local gov't to provide drainage
  - As with many services, *authority* or *power* to provide, but not duty (fire, police, etc.)
- However, if provided, duty to maintain arises
  - Maintenance must be done with reasonable care
  - Liability for failure to maintain

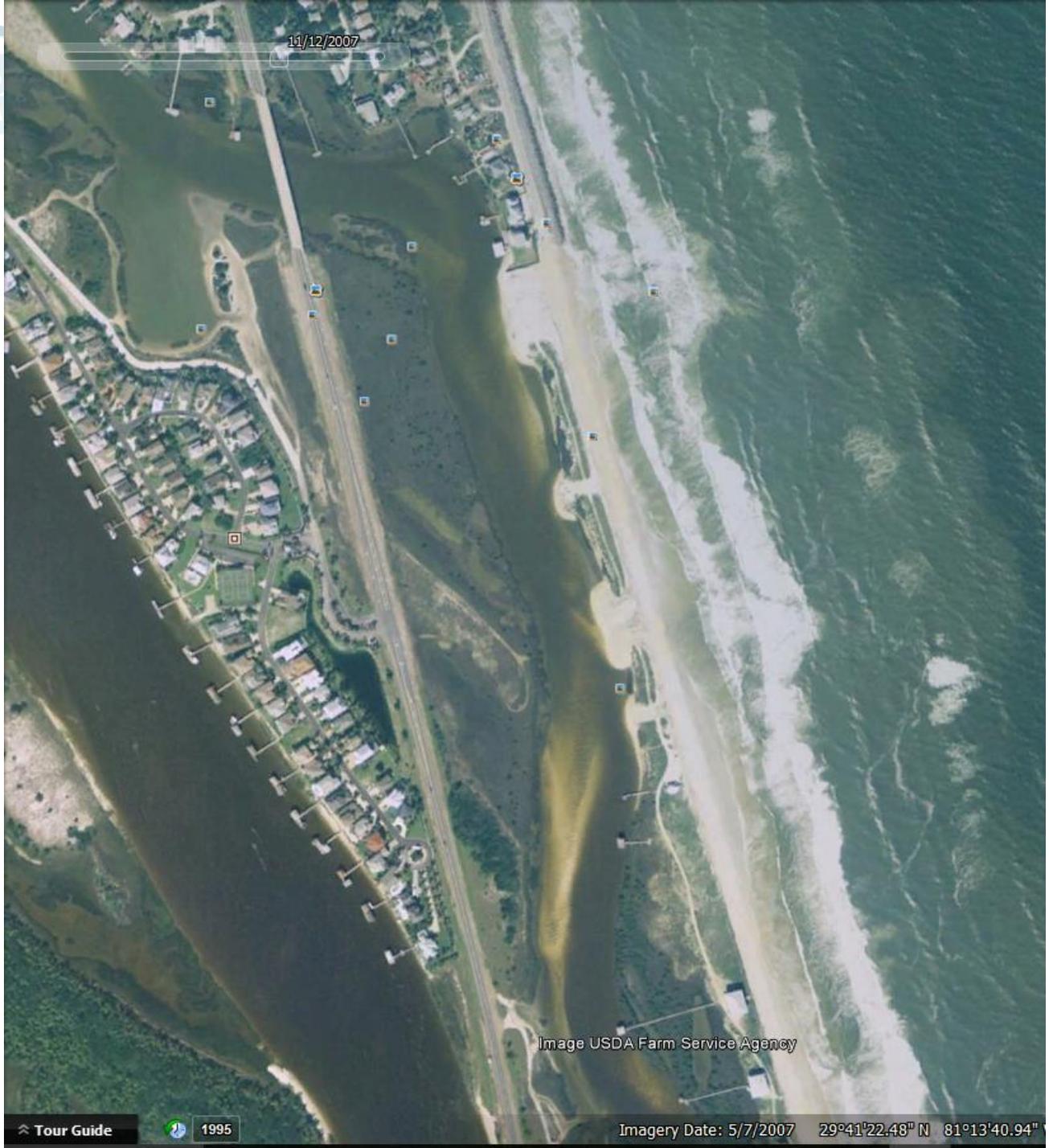
# Maintenance vs. Upgrade

- Why the difference?
  - For existing, people now depend on it
  - No right to depend on what hasn't been built
  - Separation of gov't powers
  - Need to preserve the discretionary power of the legislative branch
- Distinguish
  - Immunity for planning as this is legislative
  - No immunity for “operations;” always a duty to act with reasonable care to avoid harm to others

# *Jordan et al. v. St. Johns County*



11.12.2007



12.6.2010

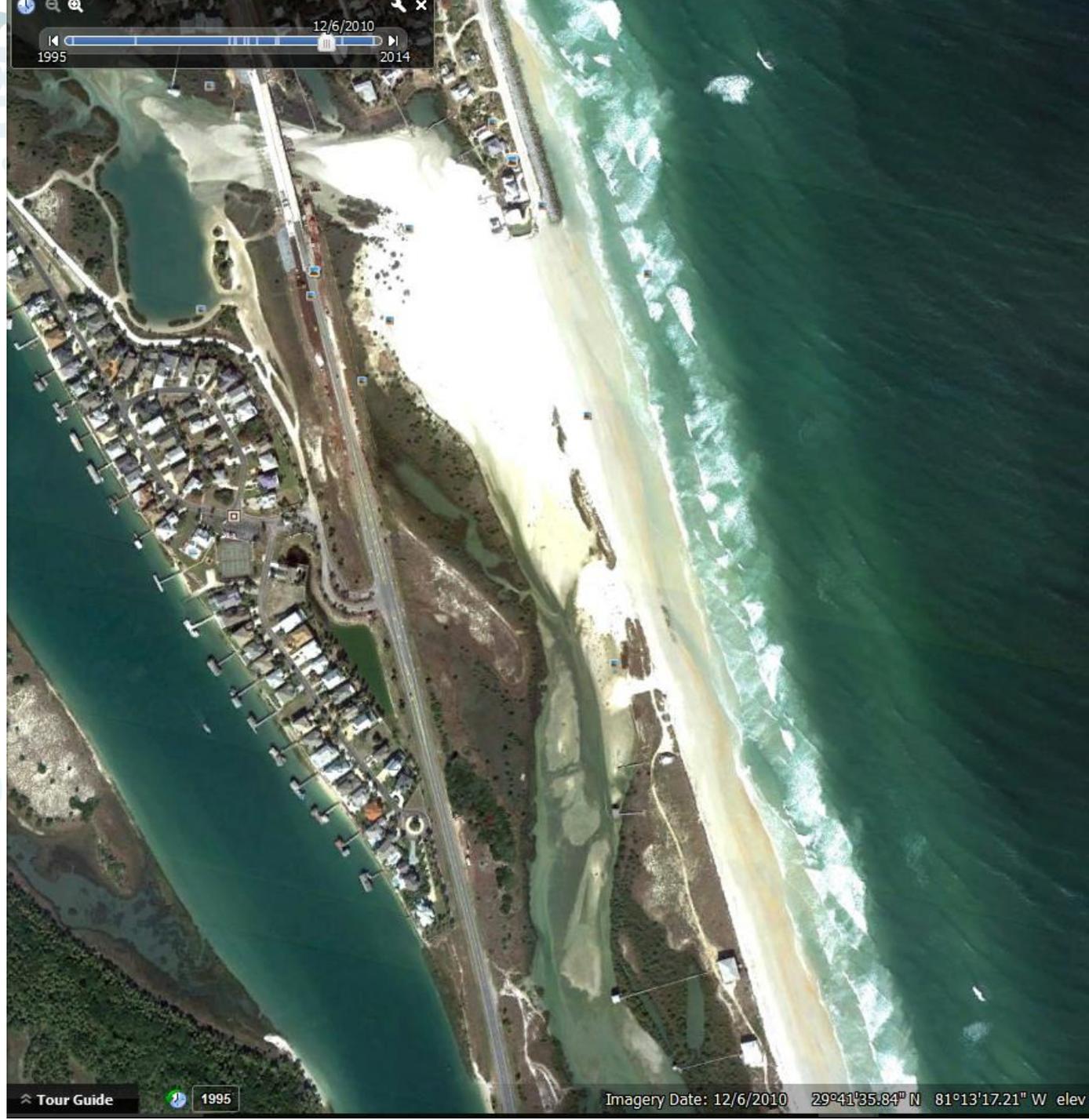




Photo by Thomas Ruppert, Florida Sea Grant



Photo: St. Augustine Record newspaper

Florida Sea Grant College Program



## County work after Hurricane Matthew





Example home  
prior to hurricanes  
Matthew (2016)  
And Irma (2017)

A two-story white house with a grey shingled roof is elevated on numerous wooden stilts. The house features a white balcony with a railing. The structure is situated on a sandy beach with scattered debris and driftwood. In the background, the ocean waves are visible under a clear blue sky. The text "Same home after Hurricane Matthew (2016)" is overlaid in the top right corner.

# Same home after Hurricane Matthew (2016)

# After Hurricane Irma (2017)

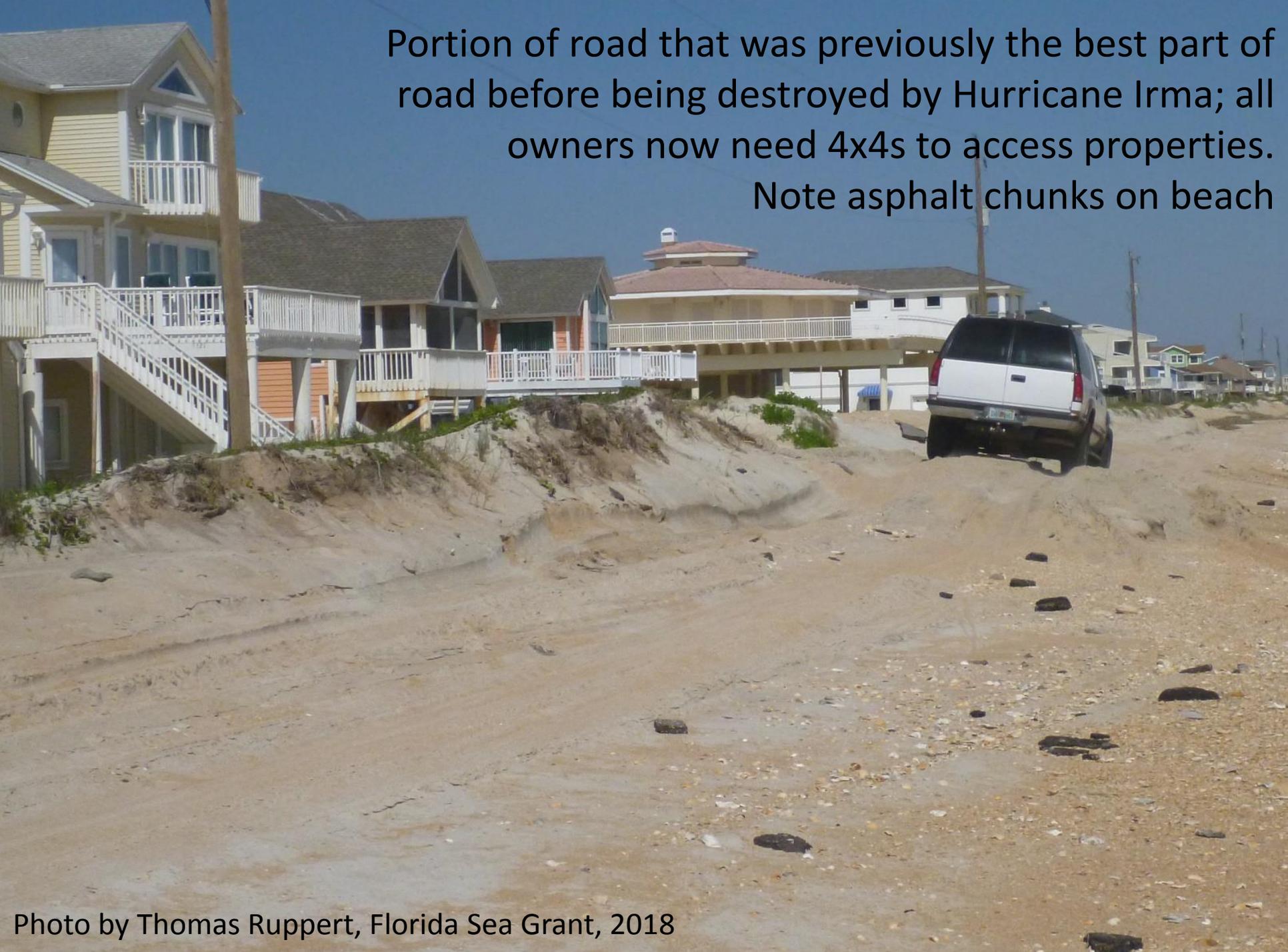


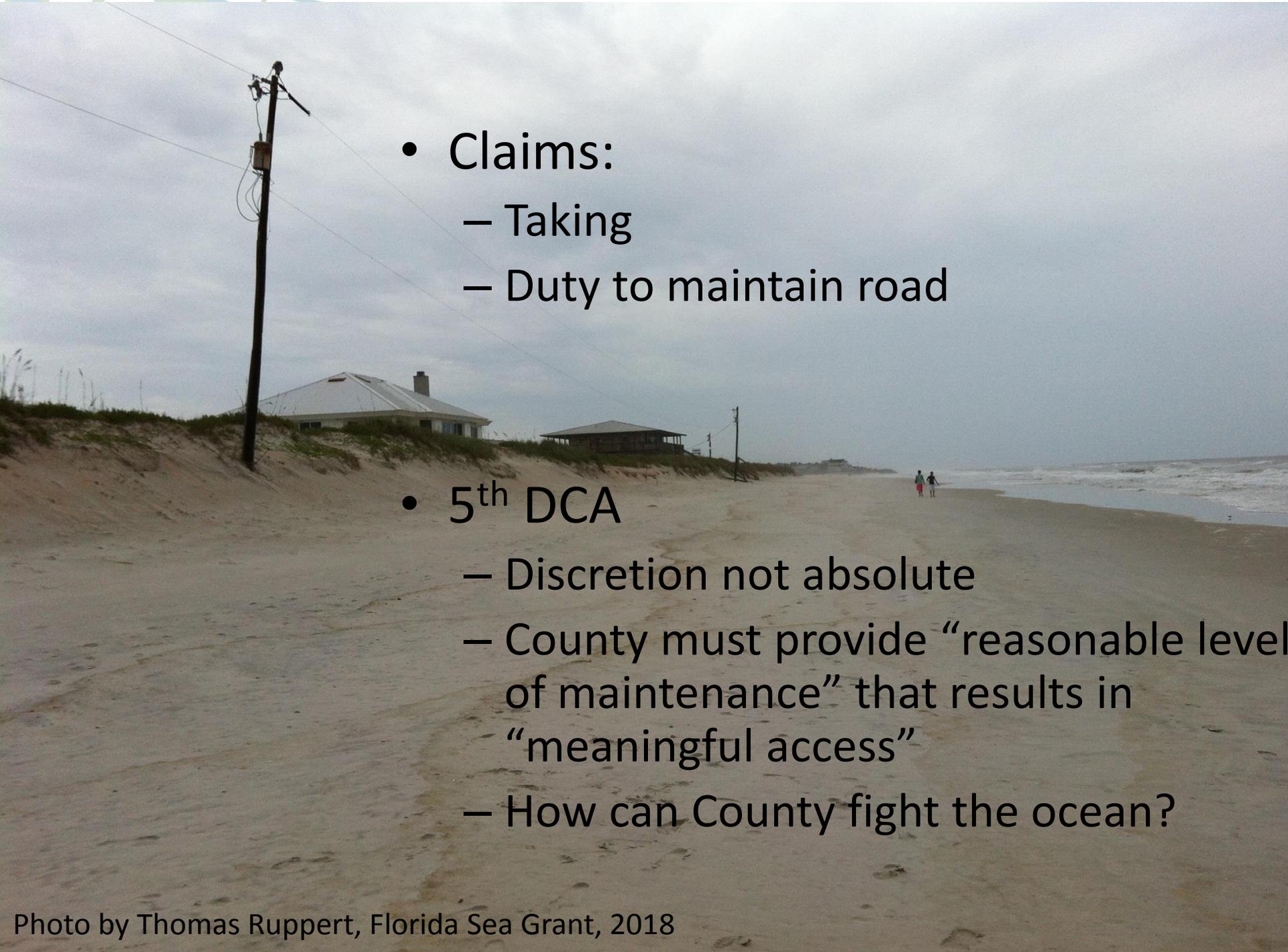
Photo by Thomas Ruppert, Florida Sea Grant, 2018

Florida Sea Grant College Program



Portion of road that was previously the best part of road before being destroyed by Hurricane Irma; all owners now need 4x4s to access properties.  
Note asphalt chunks on beach

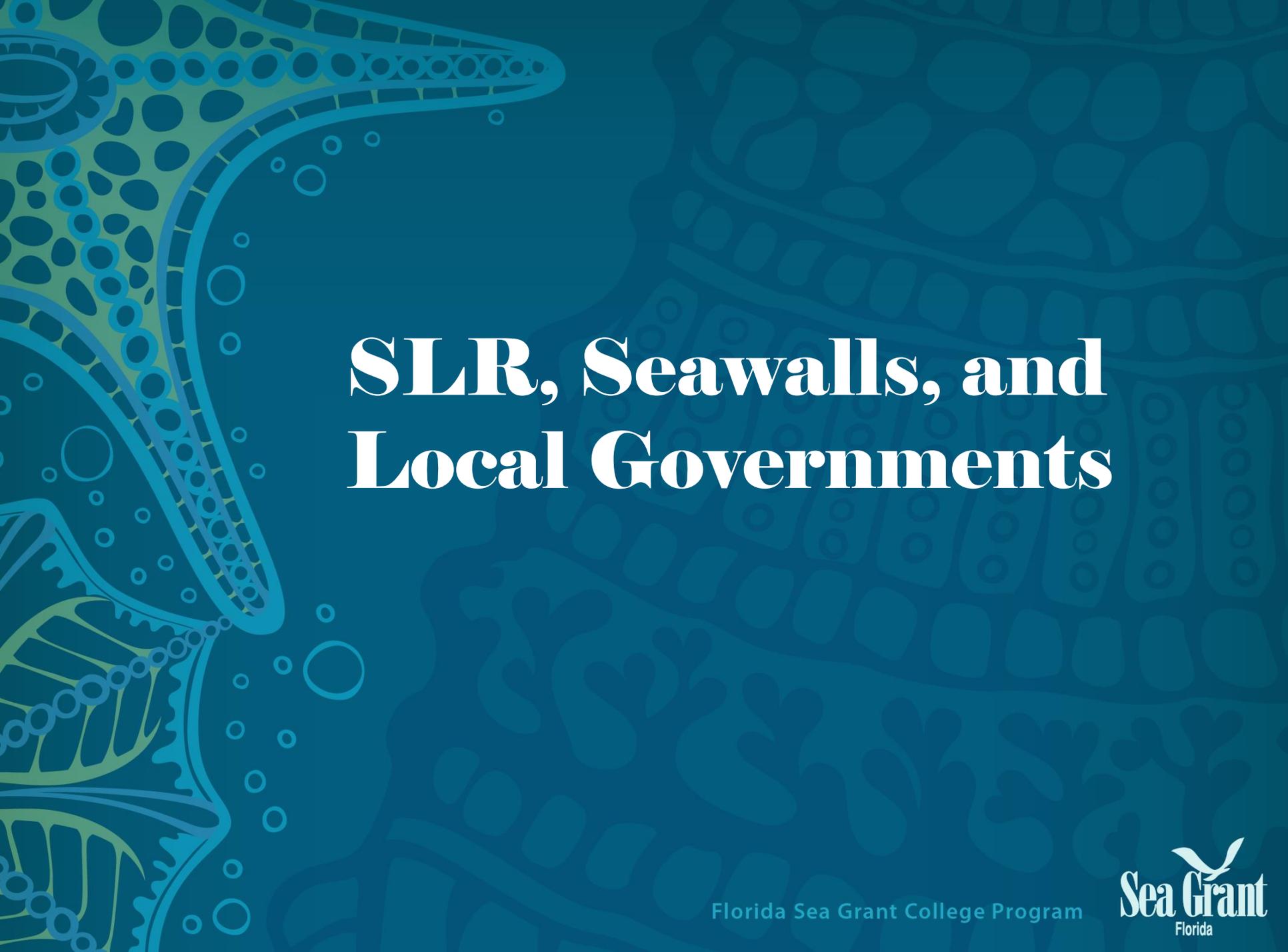


- 
- A photograph of a beach scene. In the foreground, a sandy path leads towards the ocean. To the left, a tall utility pole stands on a sand dune. Behind the dune, there are several houses, including a prominent white one with a chimney. The ocean is visible in the distance with waves breaking. The sky is overcast and grey. Two people are walking on the beach in the distance.
- Claims:
    - Taking
    - Duty to maintain road

- 5<sup>th</sup> DCA
  - Discretion not absolute
  - County must provide “reasonable level of maintenance” that results in “meaningful access”
  - How can County fight the ocean?

# But. . . . New Case Law

- St. Bernard Parish Gov't v. United States, 887 F.3d 1354 (Fed. Circ. 2018)
- Affirmative gov't action requisite
- Focus on harm from “maintenance” (or lack thereof) sounds in tort, *not* under 5<sup>th</sup> Amend.
- *BUT*, all Florida trial courts still bound by the *Jordan* decision



# SLR, Seawalls, and Local Governments

Florida Sea Grant College Program







## Memorandum

**Memorandum No: 17-016**

**Date:** January 26, 2017

**To:** Honorable Mayor and Commissioners

**From:** Lee R. Feldman, ICMA-CM, City Manager

**Re:** Enforcement of the City's Seawall Ordinance - ULDR Section 47-19.3

---

As you are aware, the City of Fort Lauderdale adopted amendments to ULDR Section 47-19.3 on June 21, 2016 (CAM #16-0662) to establish construction standards that ensured seawalls and similar structures contributed to coastal resilience and mitigated the effects of tidal flooding and sea level rise. The ordinance included two provisions under which a property owner may receive a code violation:

1. Failing to maintain a seawalls in good repair and setting a timeline of 365 days for completion of repairs if cited; and
2. Requiring owners to prevent tidal waters entering their property from impacting others properties or the public right of way and setting a timeline of 365 days for remedy if cited.

# New Sea Wall Ordinances

- Fort Lauderdale
  - Citation for allowing salt-water to flow over your property and flood others
- Miami Beach
- And many others already done or working to establish new minimum heights
  
- Does this violate property rights?
- Who should have to pay?

# Bert J. Harris Act (Ch. 70)

- Inordinate burden on property
  - Lots of confusion due to similar language
- Focus on two types of “existing use”
  - Current
  - Future: reasonably foreseeable, non-speculative, suitable for property, *and* compatible with adjacent land uses

# Bert J. Harris Act (cont.)

- Definitions of “suitable” and “compatible” but no *in pari materia* interpretation
- Ocean Concrete, Inc. v. Indian River Cty.
  - ““It is axiomatic that if an area is zoned for a particular use, that use is deemed compatible with surrounding uses.”
- Safest to regulate floodplains and flooding risk

# Supporting Articles

- Thomas Ruppert & Carly Grimm, [Drowning in Place: Local Government Costs and Liabilities for Flooding Due to Sea-Level Rise](#), FLORIDA BAR JOURNAL, Vol 87, No. 9 (2013)
- [https://www.flseagrant.org/wp-content/uploads/June\\_ELULS-Rep.-2-SLR-articles.pdf](https://www.flseagrant.org/wp-content/uploads/June_ELULS-Rep.-2-SLR-articles.pdf)
- Thomas Ruppert, *Castles—and Roads—in the Sand: Do All Roads Lead to a “Taking”?* (forthcoming 2018, *Env’tl Law Reporter*) (submitted draft in conference materials)
- Emma Hollowell and Thomas Ruppert, [Seawalls & Sea-Level-Rise-Induced Flooding: Addressing Public and Private Infrastructure](#) , 34 *Env’tl. and Land Use Law Section Reporter of the Fla. Bar* 4 (June 2017)

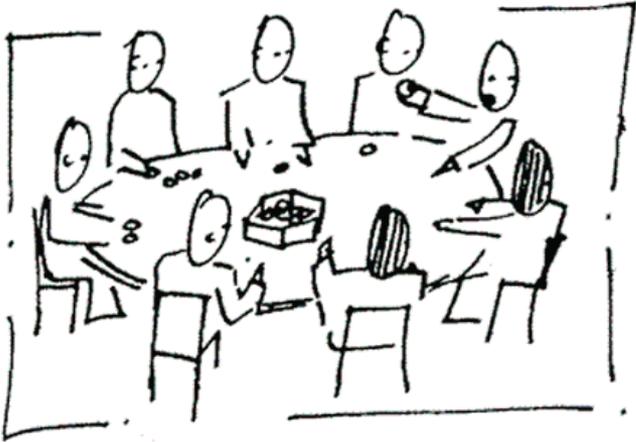
A coastal scene with a damaged concrete structure in the foreground, a rocky beach, and a wooden structure on stilts in the background. The concrete structure is a large, rectangular block with a circular hole and some dark, irregular marks on its surface. It sits on a sandy and rocky shore. In the background, there are large, light-colored rocks scattered along the beach. To the right, a wooden structure with a balcony is built on stilts. The ocean is visible in the distance under a clear blue sky.

“[A] foolish man . . . built his house on sand. The rain came down, the streams rose, and the winds blew and beat against that house, and it fell with a great crash.”

Matthew 7: 26-27

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**TRUPPERT@UFL.EDU**  
**[www.flseagrant.org/coastalplanning](http://www.flseagrant.org/coastalplanning)**

# Group Activity #2



Using the poster on the table, and the input from the presentation, review the actions of each section and in thinking of a 1-5 year action plan and the priorities selected previously:

- highlight the actions that relate to the priorities from the first group activity
- note if these actions are feasible in the 1-5 year timeframe, reframe if necessary
- Identify other actions needed to address priorities
- Identify agencies/departments for each action

30 Minutes

# Questions and Take Aways



# Peril of Flood

Florida's Coastal Resiliency Portal

Tara McCue, AICP – Project Manager

ECFRPC

Director of Planning and Community Development

Tara@ecfrpc.org

[www.perilofflood.net](http://www.perilofflood.net)

[www.ecfrpc.org](http://www.ecfrpc.org)

