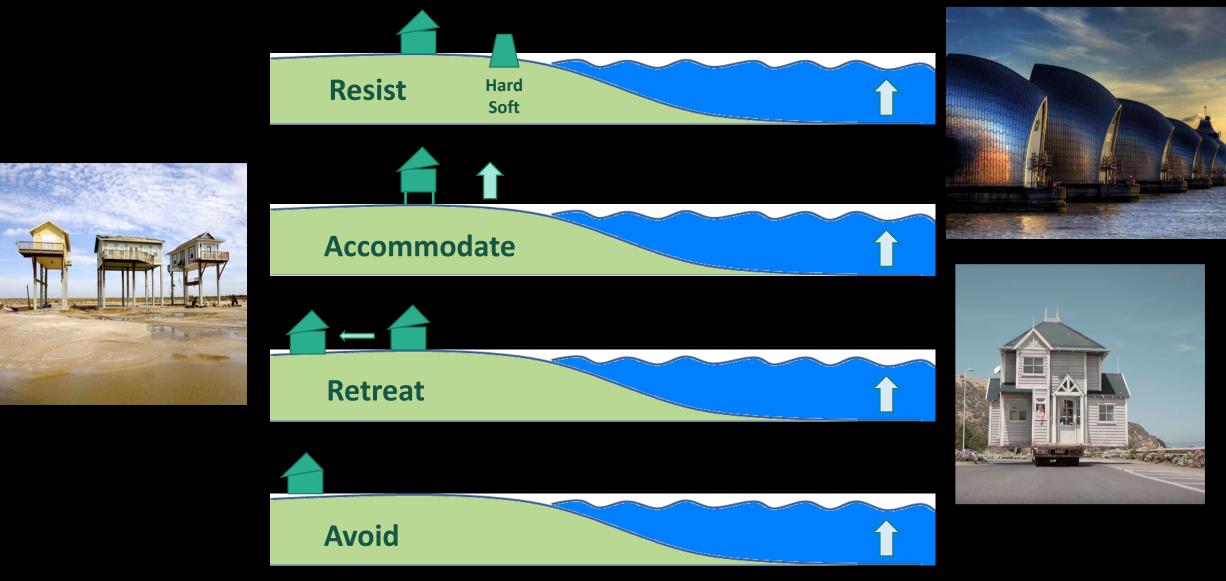
## MANAGED RETREAT WHY & HOW

A.R. SIDERS, JD, PHD @SIDERSADAPTS SIDERS@UDEL.EDU DISASTER RESEARCH CENTER

### COASTAL ADAPTATION STRATEGIES



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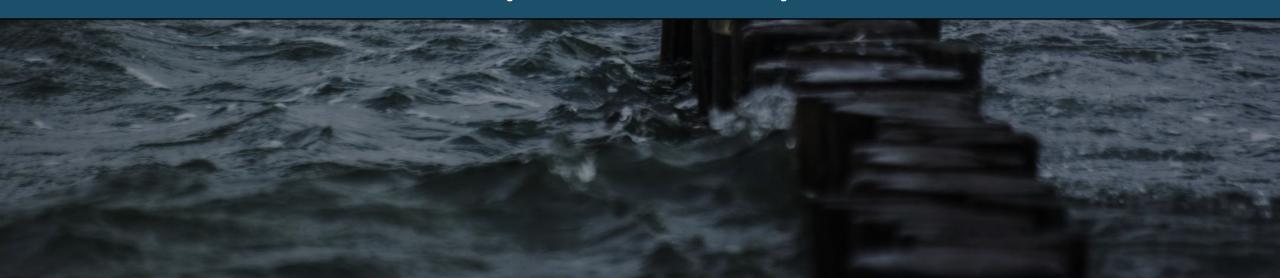
e.g., Doberman et al. 2019; Burby and Nelson, 1991; Deyle et al., 2007; Titus, 1998

# Why managed retreat\*?

\* Planned retreat, strategic retreat, strategic/planned relocation/resettlement, etc. I am a lawyer. Ask me about semantics. Please.



# *Why retreat?* 1. People need options



The New York Times

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**BUILT TO FLOOD** 

#### Brutal Choice in Houston: Sell Home at a Loss or Face New Floods



By Audra D. S. Burch

March 30, 2018

Developing Storm | Part 2 Build, flood, rebuild: flood insurance's expensive cycle

Houston Chronicle



New Orleans Photo: Bart Everson Flickr, CC2.0

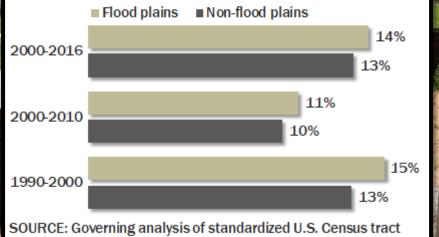


# *Why retreat?* 2. Unbuild risk



#### **U.S. Flood-Prone Population Growth**

Calculated population estimates show areas in FEMA-designated 100-year floodplains are experiencing slightly faster growth.



data from IPUMS NHGIS, University of Minnesota; FEMANFHL

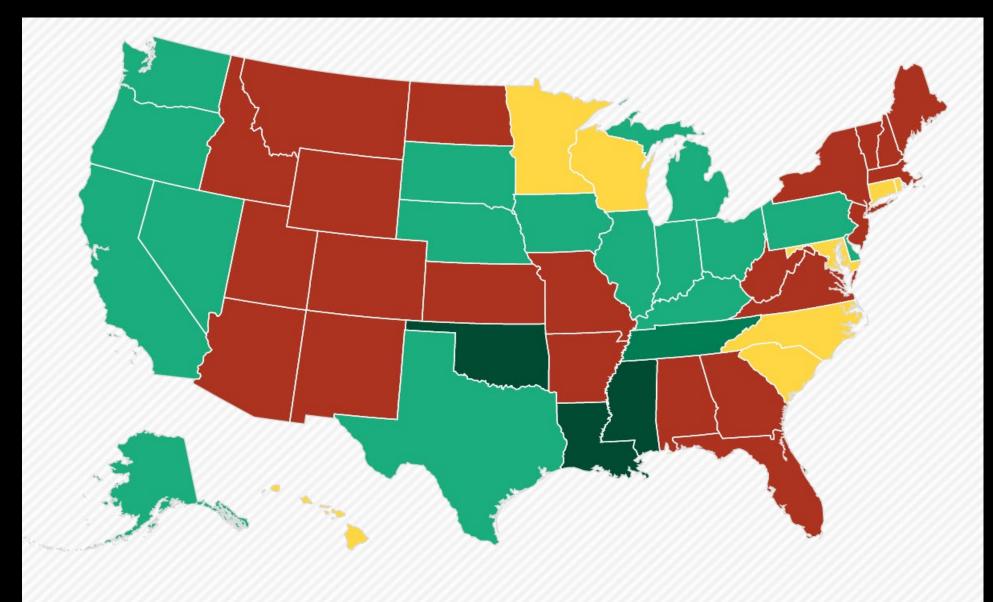
NH building as fast in the 10-year floodplain as out (96% chance flood in 30year mortgage) (Climate Central 2019)

## **RISKY WATERS**

Everyone knows it's a bad idea to build new development on flood-prone land. So why do we keep doing it? Flood Risk Disclosure Laws

By NRDC & Sabin Center for Climate Change Law

NH Grade: F



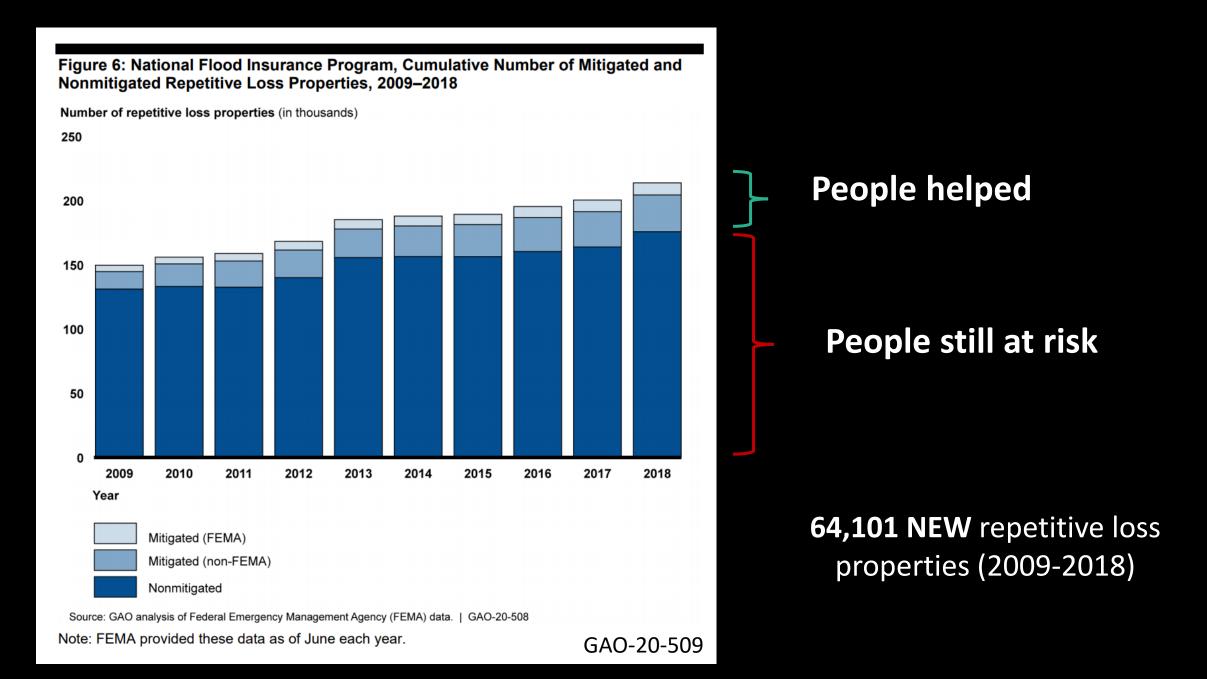
Adequate

Better

Best

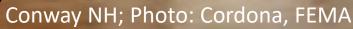
Inadequate

None



## Repetitive Loss

- 3,049 National Flood Insurance Policies in NH
- Just **393** repetitive loss properties account for **HALF** NH insurance claims
- 101 properties in coastal counties account for half the coastal claims
- 43 properties in Hampton alone account for 20% of the state claims
- Nationwide, 81% of mitigation for homes used retreat (GAO 2020)







## *Why retreat?* 3. Best solutions use ALL tools





#### Room for the River

Rijkswaterstaat is taking measures to increase the capacity of rivers to cope with high water levels at 30 locations in the Netherlands. These measures will reduce the risk of flooding.

#### What is the problem

The risk of flooding in the Netherlands is steadily growing because the flood plains of rivers are shrinking. Water levels are also rising because there is more frequent and heavier rainfall.

#### What does Rijkswaterstaat do

Water levels in rivers have to be lowered and to achieve that we are creating more room for rivers at 30 locations in the Netherlands. For example, we are relocating dykes further inland and constructing high-water channels. We are also lowering the floodplains in some locations. These areas will then be inundated during periods of high water levels, thus temporarily giving the river more room and easing the pressure on the dykes.



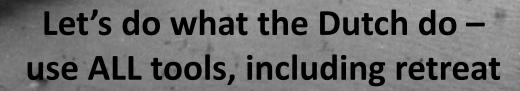
Rijkswaterstaat

Home

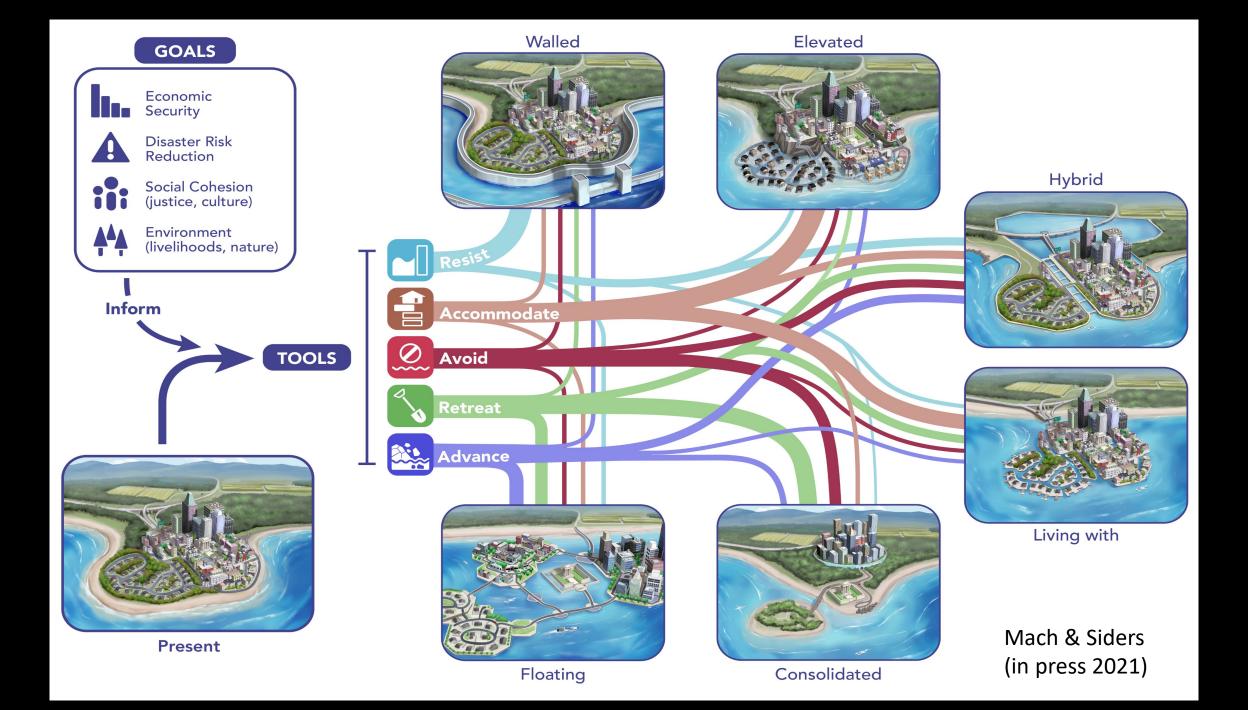
About us

Gems of Rijkswaterstaat

Room for the River

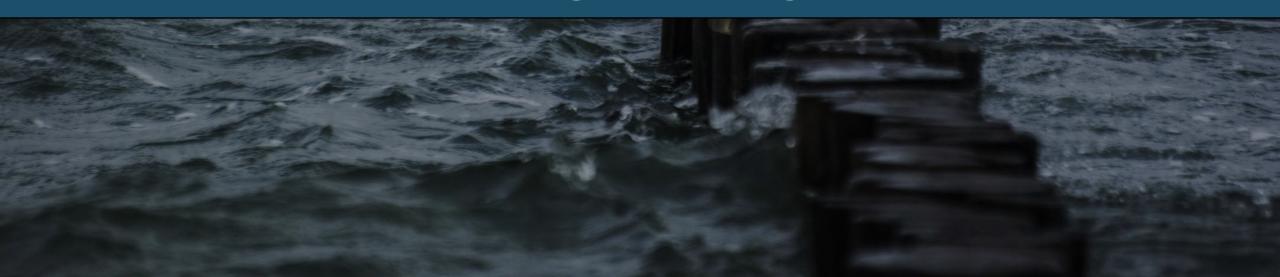


#### 1953 Storm





# Why retreat?4. Do something exciting - ambitious



"The question of what you do about [our coasts] is <u>not a</u> <u>rational engineering</u> <u>conversation</u>. It's a conversation about <u>what we</u> <u>want to be as a society</u>, what a place means to us as a community locally and as a <u>country.</u>" GE

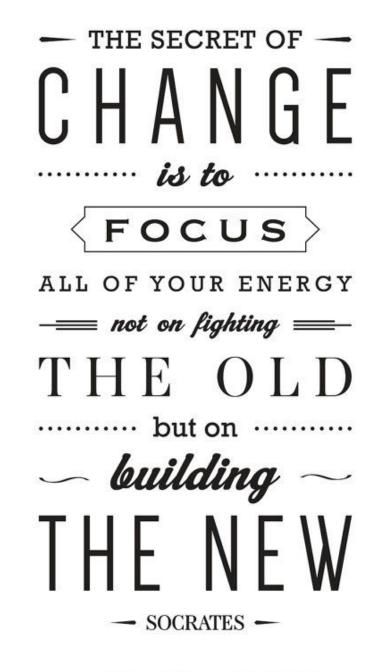
- Ben Zaitchik, JHU in Hersher, 2019

Change is inevitable. So -

What do we preserve?

What do we allow to change?

What do we <u>purposefully</u> change?



© AMALIA LOPEZ - LATTE DESIGN

# How managed retreat?

### Keys to Retreat

Vision

### Equity

## Leadership (and Expertise)

Plan

"Retreat, Hell! We're just advancing in a different direction." - USMC General Oliver P. Smith

## What do you want your state, your coast, your economy to look like in 100 years? 30 years?

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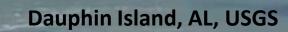


Photo: Blue Square Thing, Flickr, CC2.0

Positive Vision > Avoiding Fear





### Keys to Retreat

Vision

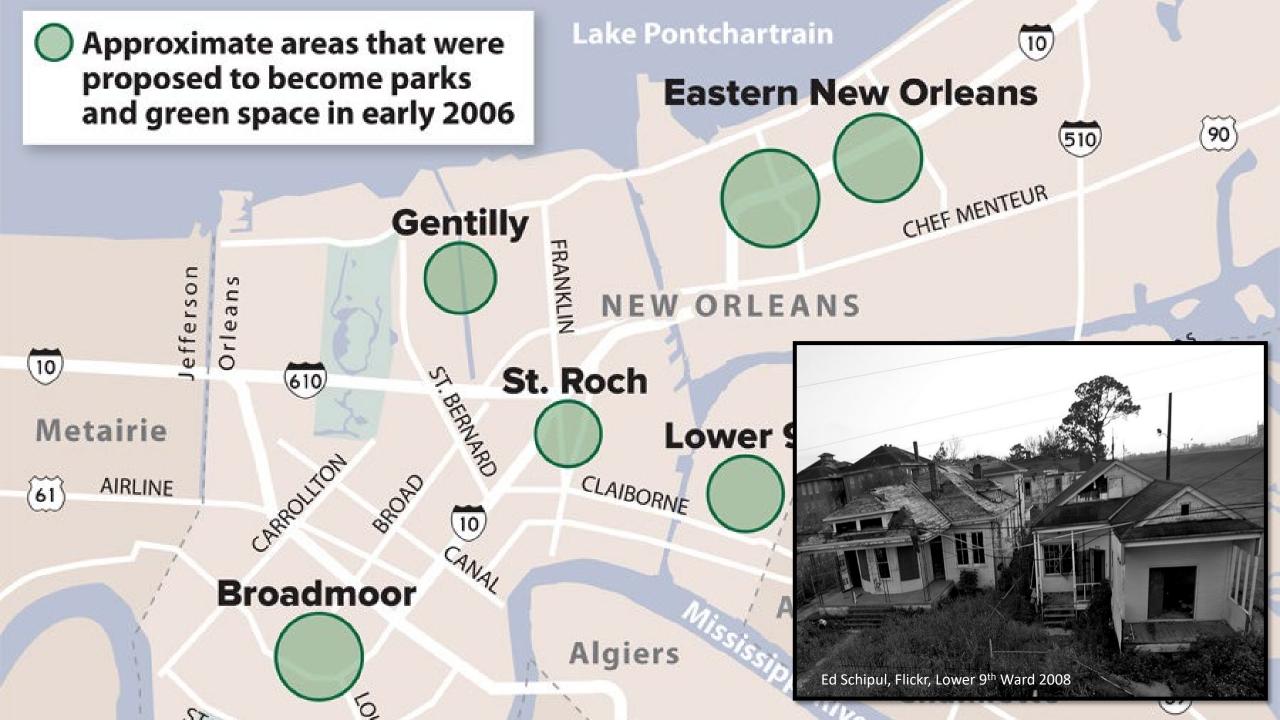
### Equity

## Leadership (and Expertise) Plan

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# What does equity mean for your community?

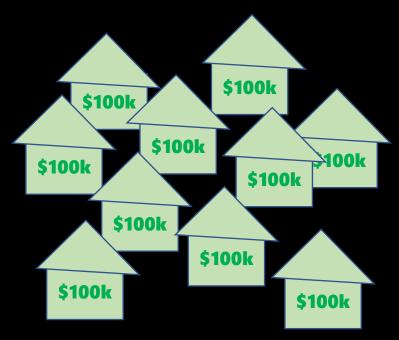
- Take race, income, historic injustice into account explicitly
   Be skeptical of CBA
- Account for difference in local capacity



Grand Forks, North Dakota

#### **COST-BENEFIT CHALLENGE**

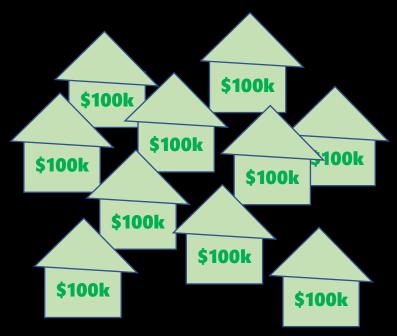
# WHERE WILL YOU BUILD THE FLOODWALL?





#### **COST-BENEFIT CHALLENGE**

### WHERE WILL YOU OFFER BUYOUTS?





### Keys to Retreat

Vision

### Equity

## Leadership (and Expertise) Plan

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Dennis Knobloch, Former Mayor of Valmeyer, IL

WELCOME

gettyimages"

John Zich EYE

25

## ELCOME TO VALMEYER

Lo .. An and a

Routen

25 YEAR

getty images

John Zich

## Expertise



#### **Uniform Relocation Act**



Real Estate Agents



Engineers to assess damage



**Environmental Site Inspectors** 



Assessors for home value



**Cost-Benefit Calculation** 



Willing to talk to people with prior experience ...

@sidersadapts

#### Draw on Experience & Resources



Sherbrooke

#### National Oceanic and Atmospheric Administration • This Sile • NAA CEAN & COASTALRESOURCE MANAGE

#### Managed Retreat Strategies

Pacifica State Beach Adopts Managed Retreat Strategy
 Multi-pronged Approach to Manage Erosion at Surfer's Point,
 Ventura. CA



#### Managed or planned retreat allows the shoreline to advance inward unimpeded. As the shore erodes, buildings and other infrastructure are either demolished or relocated inland. Coastal managers realize that in many situations attempting to stop erosion through structural or non-structural solutions is a losing battic. Shoreline protection

or non-structural solutions is a losing battle. Shoreline protection efforts and/or thrite repeated maintenance would be too costly and ultimately ineffective as preventing further ension. A managed retreat approach typically involves ultimately ineffective as preventing further ension. A managed retreat approach typically involves solutions of the requestion coupled with several closer planning and regulatory techniques including abording planning, to identify high-risk areas where this type of policy would be the only cost-effective, long-term solution: regulation the type of structure allowed near the hore to ensure that buildings are small anough and constructed in a way to facilitate relocation when needed; and instituting <u>relocation</u> assistance and/or. buy-back programs to help with relocation costs or compensate property owners when the location of the second se

assistance and/or buy-back programs to help with relocation costs or compensate property owners when their property becomes unusable. While the overall policy emphasizes retreat, a managed retreat approach may allow some erosion control measures using soft-stabilization techniques to prolong the life of shorefront buildings and other infrastructure for a little while. However, hard stabilization structures or repeated beach renourishment are generally not permitted.

Benefits: Usually less expensive then costly structural stabilization projects that may only be a temporary solution, especially in highly erosive areas. Nainianis natural shoreline dynamics and enables shoreline habitats to migrate inland as the shoreline erodes to prevent loss of wetlands and other intertidal areas.



#### MANAGED COASTAL RETREAT

A LEGAL HANDBOOK ON SHIFTING DEVELOPMENT AWAY FROM VULNERABLE AREAS



Buy-In for Buyouts The Case for Managed Retreat from Flood Zones



A Report on Voluntary Property Buyouts in the Nation's Floodplains

A Common Ground Solution Serving People at Risk, Taxpayers and the Environment



#### GEORGETOWN CLIMATE CENTER A Leading Resource for State and Federal Policy

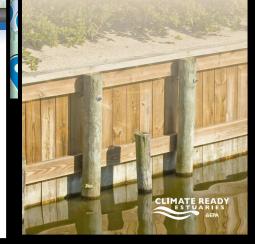
A Leading Resource for State and Federal Policy

#### MANAGED RETREAT TOOLKIT



Managed retreat, or the voluntary movement and transition of people and ecosystems away from vulnerable coastal areas, is increasingly becoming part of the conversation as coastal states and communities face difficult questions on how best to protect people, development, infrastructure, and coastal ecosystems from sea-level rise, flooding, and land loss. Georgetown Climate Center's new Managed Retreat Toolkit combines legal and policy tools, best and emerging practices, and case studies to support peer learning and decisionmaking around managed retreat and climate adaptation.

#### **ROLLING EASEMENTS**





erosion issues at Surfer's Poin

0 4 7

### Keys to Retreat

Vision

### Equity

## Leadership (and Expertise) Plan

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#### ENGAGE – MEET PEOPLE WHERE THEY

ARE

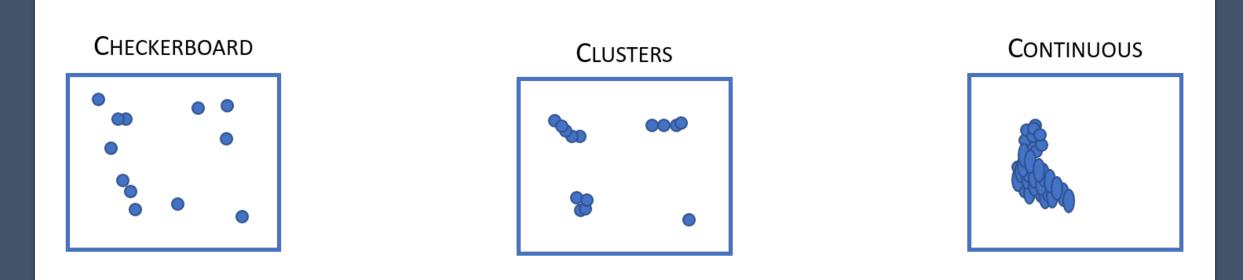






implement retreat in a way that matches goals

@sidersadapts



#### any of these could the be the "best" option, depending on your goal

### IF your goal is to ...

- aid disaster victims
- create city parks to address air quality or provide green amenities
- create pocket prairie habitats

### THEN it is better to ...

 buy out people who were worst affected, regardless of where they live
 acquire small parcels spread through town acquire species-appropriate habitat parcels either spread out or in a pattern that creates a habitat bridge

## PLAN DETAILS

- What are you going to do with the land?
  - Who will own it? Maintain it?
- Where do people move TO?
  - Affordable housing
  - Avoid new development
- What about neighbors who stay?
- How will you decide who participates?
- Communication?
- Have an integrated plan
- Be totally transparent
- Involve community members
- Get creative!



Jobs Programs Water Quality Partnerships Gov Rentals Life Estates Movable Properties **Expiring Permits** Relocate Businesses Consolidate Towns **Resilience** Zones Smart Decline



@sidersadapts









TNC Pocket Prairies

5. (h. -

Scotland heritage documentation

#### Why consider retreat?

Give people **options;** managed > abandoned

**Unbuild risk** - repetitive losses

Best plans draw on all options

**CHOOSE** what to preserve and what to purposefully change

#### How?

Vision – Advance in a new (positive) direction
Equity – Actively work to undo historic injustices
Leadership (and Expertise) – Leverage others' experiences
Plan – Integrated, participatory, transparent, creative

### Questions?

siders@udel.edu @sidersadapts

