

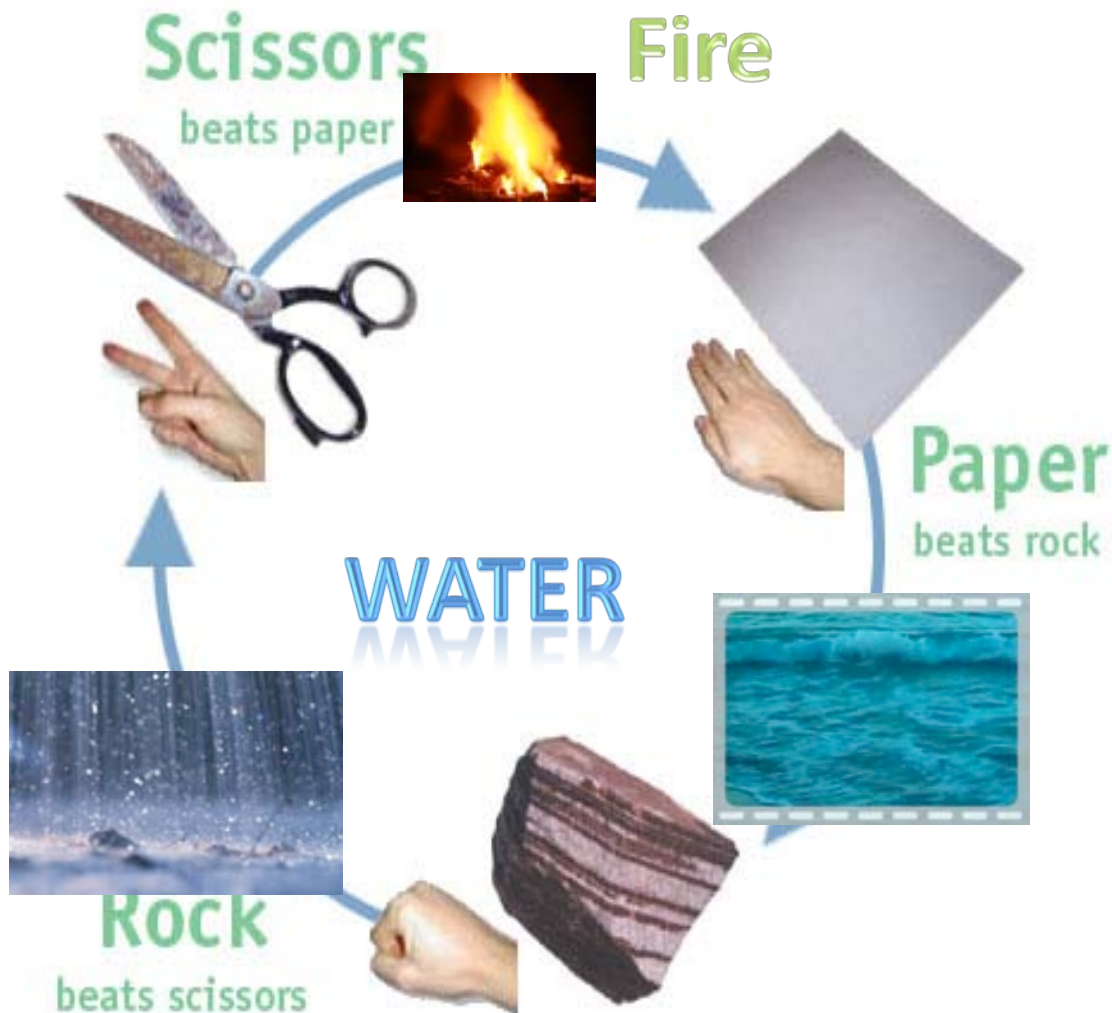
When retreat is the better part of valor:

Analysis of Strategies to Incentivize Retreat from the Shore



If the waves crash up against the beach, eroding dunes and destroying homes, it is not the awesome power of Mother Nature. It is the awesome power of Mother Nature as altered by the awesome power of man, who has overpowered in a century the processes that have been slowly evolving and changing of their own accord since the earth was born. B. McKibben. The End of Nature 51 (1989)

When is retreat is the better part of valor?





Browning cottages
Matunuck, RI



Towers and CG House 2012



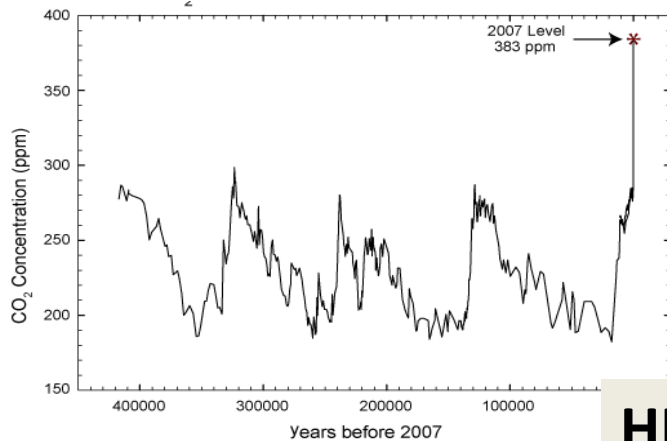
Ex-Lucas property SC



Atlantic Ave in Misquamicut area of Westerly



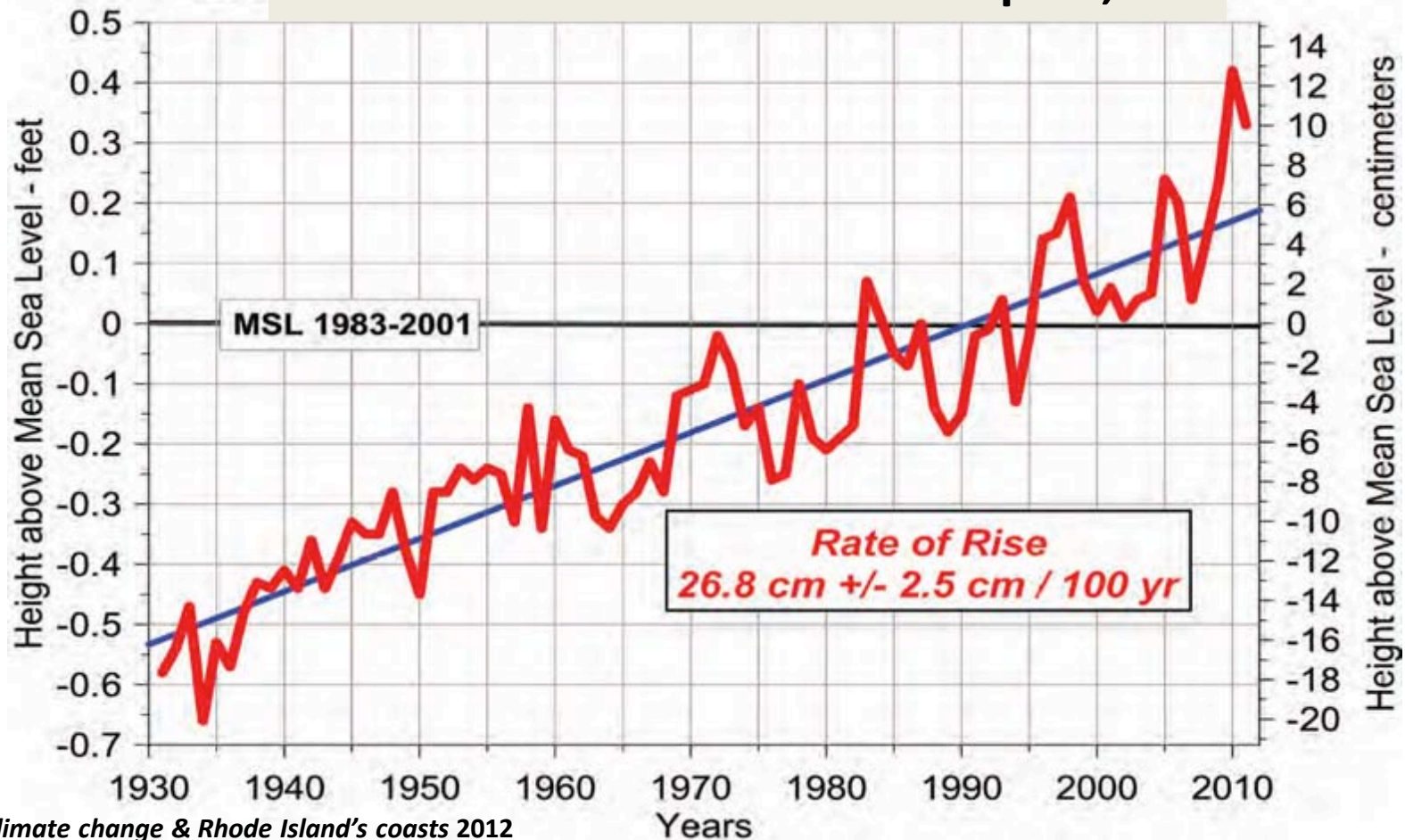
Quonset State Airport

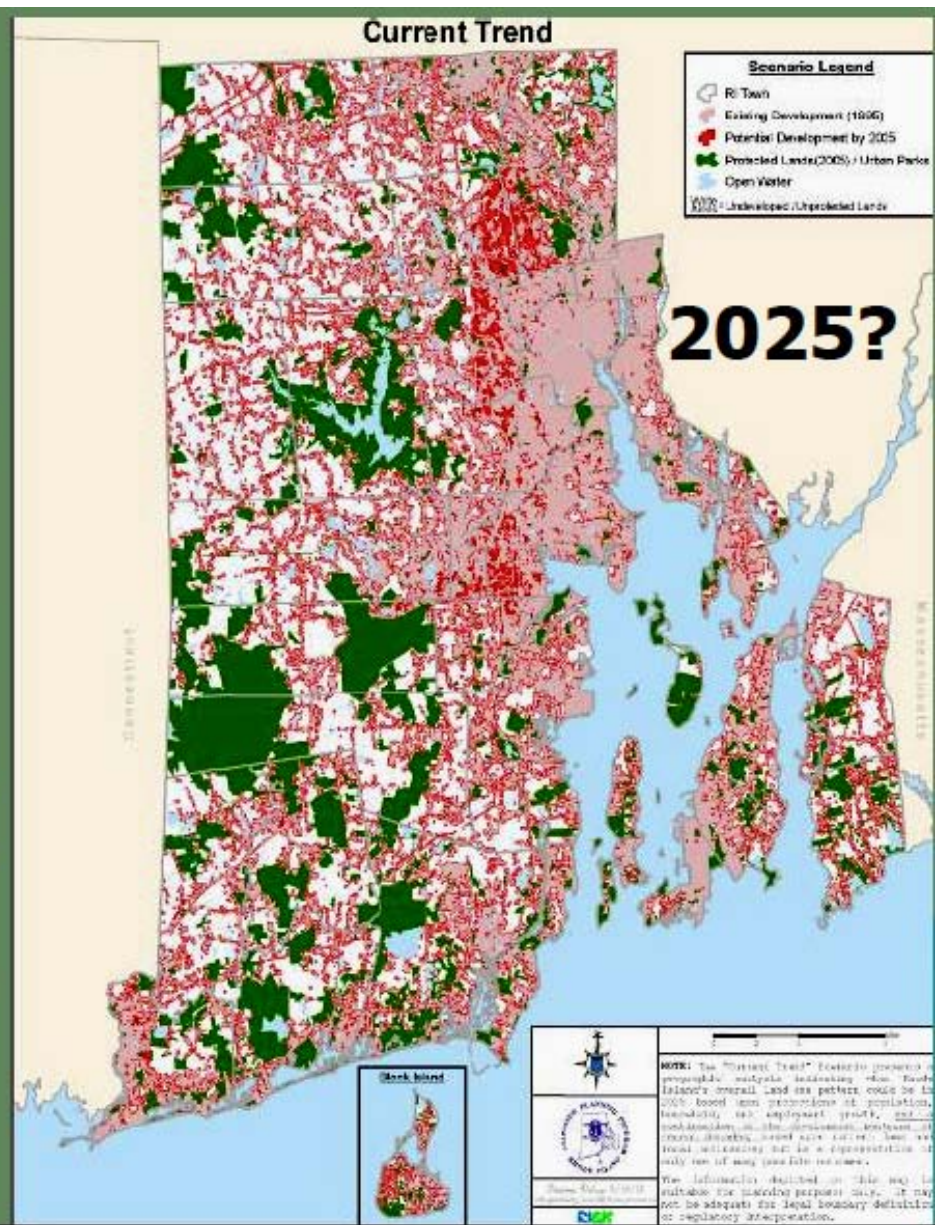
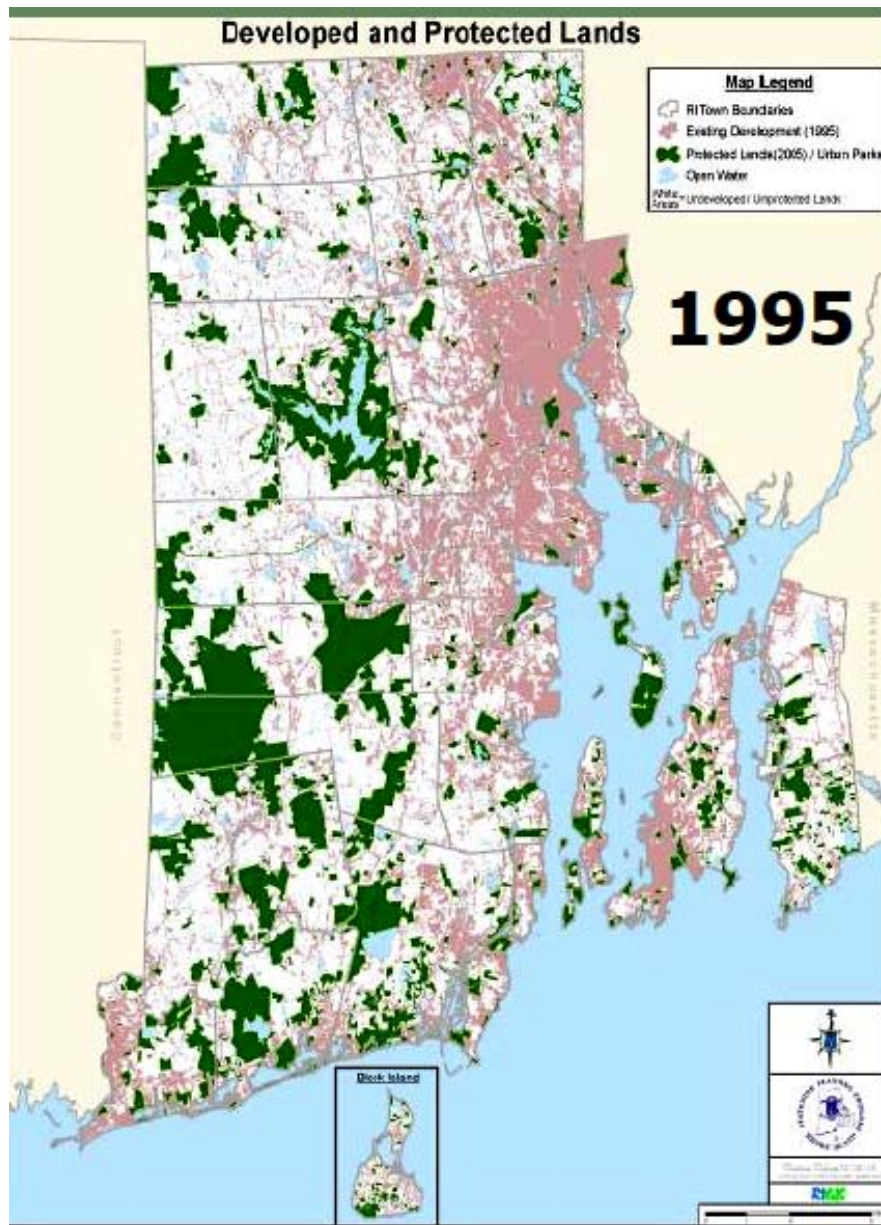


***“We have a 100-year flood
every two years now”***

(Governor Cuomo to President Obama 10.30.12)

HISTORIC SEA LEVEL RISE-Newport, RI





Surge Height 6 m (MLLW)



Courtesy of Malcolm Spaulding

Freedman. *Climate change and Rhode Island's coast: Where will tomorrow's shoreline be?* (2008)

Fields Point Providence, RI

LeHigh Portland Cement
St. Lawrence Cement
Keyspan LNG
Teppco Terminal
Hudson Asphalt Com
Narragansett Bay Commission
North Pacific Plywood



Storage and infrastructure in the flood zone



“Given the importance of the Ocean State’s beaches to the tourism economy, the maintenance - and re-building, when necessary - of our beaches seems like a no-brainer.” (Faulkner and Fisher *Shoring up the shoreline isn't cheap* 2011)

Cost: \$626,860 (in 2011 dollars) to replenish Narr Town Beach (60,000 yds³) = ~\$10.50/yd³

Total damages for Sandy?
\$10-20B; \$5- 10 insured
 (NYT 10.29.12)

Erosion by the numbers

1-2 feet

Average annual rate of retreat for Rhode Island shorelines

30 feet

Amount by which exposed sandy shores—for example, Matunuck in South Kingstown—can recede in a single severe hurricane

76%

The portion of the shoreline that could be adversely affected if sea level continues to rise by one foot per century—as is actually being measured at Newport

26.6%

Rhode Island's total population growth from 1900 to 1980

101%

Average population growth in Rhode Island's coastal communities

Trend is not destiny

R.Dubos

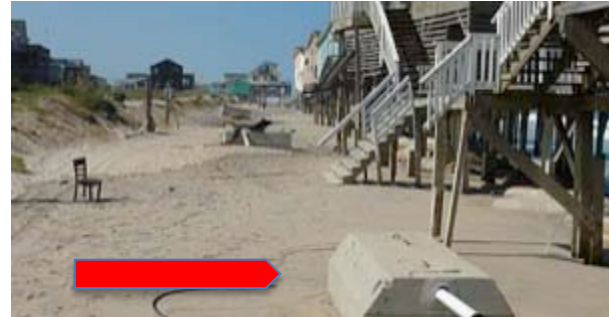
- Federal, State and local govts and private sector have adequate legal authority to address risks associated with *current* and *future* devt in SFHAs in coastal zone
- Federal, State and local govts and private sector have the ability to shape the future in a way that protects public health, economic interests in the shore, functioning ecosystems and ecosystem services.....

T TYPOLOGY OF NON-/GOVERNMENTAL OPTIONS TO MOTIVATE RETREAT FROM SFHAs

Equity		Exigency and Perception of risk				Efficiency	
More		←-----→				Less	
	COMMAND + CONTROL	MARKET: BUY +MAKE	MARKET: TAXES + SUBSIDIES	INFORMATION			
ACQUIRE RLPs and AT-RISK PROPERTY VIA EMINENT DOMAIN	LIMIT ABILITY TO REBUILD AFTER >50% LOSS <u>and</u> LIMIT EXPANSION OF EXISTING AND NEW DEVPT (DOWNZONE, LOT MERGER)	ACQUIRE <u>AND</u> PROTECT BUFFERS VIA PDRs AND EASEMENTS <u>and</u> INCENTIVIZE RELOCATION VIA TDRS	MANDATE MULTI- YEAR RISK- and MARKET-BASED INSURANCE PREMIUMS <u>or</u> PROHIBIT ACCESS TO STATE – SUPPORTED INSURANCE POOL	REQUIRE DISCLOSURE OF FLOOD, INUNDATION AND STORM DAMAGE HISTORY BY SELLERS, REALTORS, BANKS	CLIMATE EDUCATION; LABEL EVACUATION ROUTES		
	REQUIRE <u>AND</u> ENFORCE SETBACKS AND BUFFERS (<i>EROSION CONTROL AND ROLLING EASEMENTS</i>)	LIMIT STATE RESPONSIBILITY FOR REBUILDING PUBLIC INFRA- STRUCTURE AFTER REPETITIVE LOSS	ADOPT RISK-BASED SPECIAL TAX ASSESSMENTS THAT RUN WITH THE LAND and/or OFFER TAX REBATES TO REWARD EROSION CONTROL EASEMENTS	REQUIRE <i>FIRM</i> DESIGNATION TO BE RECORDED IN LAND EVIDENCE RECORDS			
	DESIGNATE AND ENFORCE <i>UNBUILDABLE AREAS</i>	'HARD' AND 'SOFT' ARMORING; ENGINEER THE SHORELINE	CHARGE FOR "GIVINGS" THAT ALLOW CONTINUED OCCUPATION OF HIGH HAZARD AREAS				

When retreat is the better part of valor...

- I. *Do State and local govts have the authority to “take” the riskiest properties in SFHAs to protect public health, safety welfare and the envt?*
- II. *Do State, local govts have the authority to regulate or prohibit existing and future devpt in SFHAs even if regulation results in “loss of all economically beneficial use”?*



Aerial photo of
Misquamicut Beach 1938

Special Flood Hazard Areas (SFHAs)

FIRM A (Coastal) areas with a 1% or greater chance of flooding in any year and a 26% chance of flooding over the life of a 30-year mortgage.
FIRM V ... additional hazard associated with storm waves**

I. Basis of State authority to regulate and/or prohibit development of Special Flood Hazard Areas

10th Amendment: States may exercise police power to restrain the personal freedom and property rights of persons for the protection of the public safety, health, and morals ... subject to limitations of the federal and State constitutions.

Public Trust Doctrine: *by the law of nature, these things are common to all mankind: the sea, the shores of the sea, running water and the air. (Justinian Code...RI Constitution Art I§16 and 17)*

Public Nuisance: an inconvenience or troublesome offense that annoys the whole community in general

5th Amendment: *nor shall private property be taken for public use without just compensation...*

When retreat is the better part of valor: Key Strategies and Legal Issues

I. *Do State and local govts have the authority to “take” the riskiest properties in SFHAs by eminent domain?*

YES, see *Kelo v. City of New London*

- *Proper public purpose*
- *Means rationally related to ends*

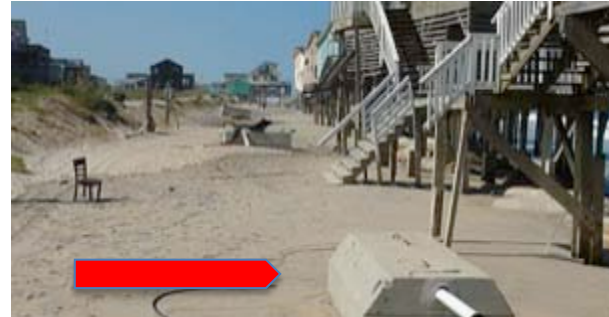
However.... Many properties are currently at risk from inundation, flood, erosion damage because of location in SFHAs + 49mi² at $\leq 4.7'$ above MHT in RI (RI Sea Grant)

i.e., eminent domain is inefficient, expensive and unfair (*beneficiary pays*)



When retreat is the better part of valor...

II. Do State, local govts have the authority to regulate or prohibit existing and future coastal devt that is at increased risk from inundation, erosion and/or storm surge due to global warming even if regulation results in “loss of all economically beneficial use”? (i.e., Polluter pays)



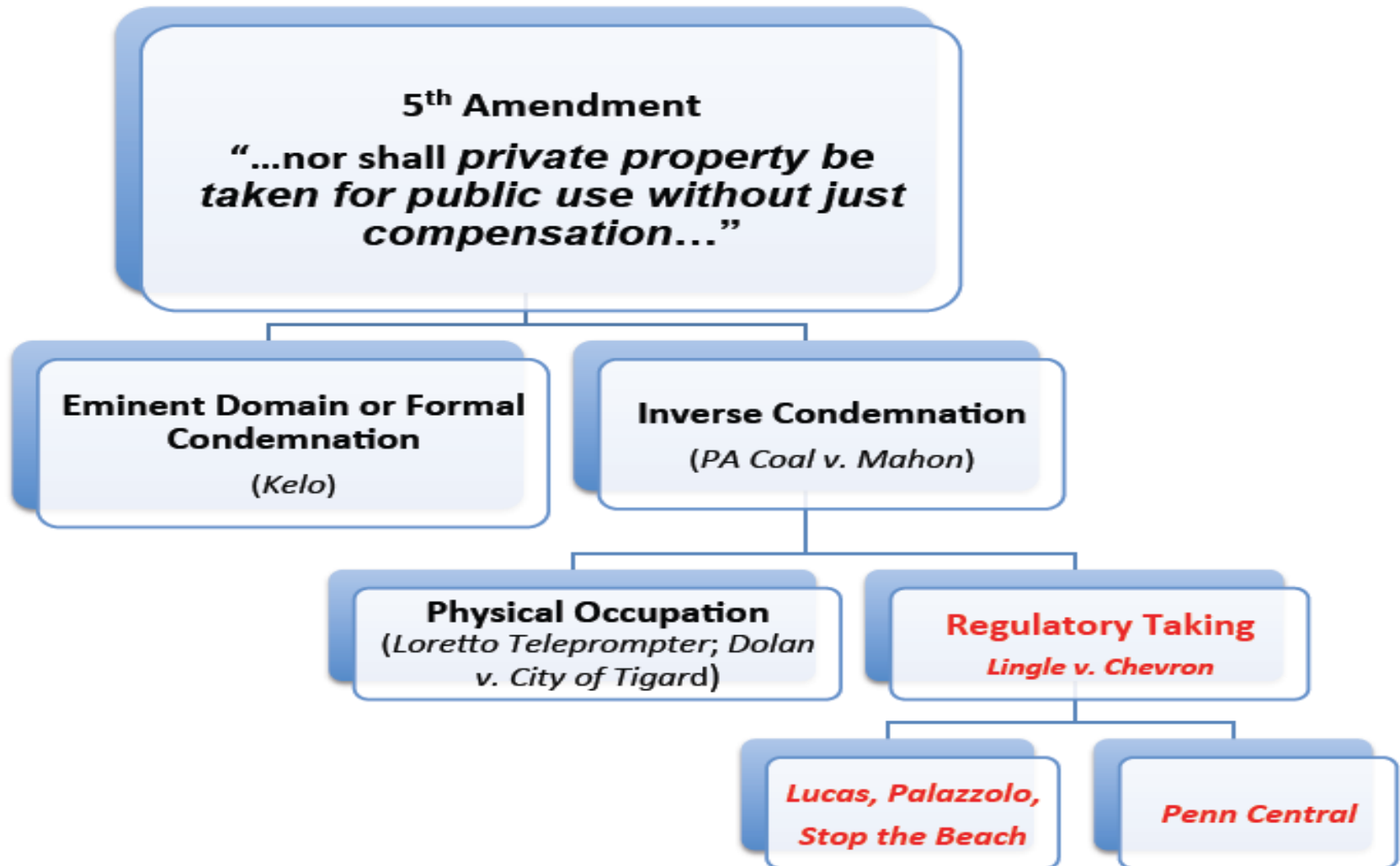
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FIRM V ... additional hazard associated with storm waves.

5th Amendment *Takings* Analysis

Can State, local govts regulate or prohibit devt of property even if it results in “loss of all economically beneficial use”?



Regulatory Takings Test Post---Palazzolo

- I. Did a regulatory action result in physical invasion, seizure, or limitation on “right of exclusive possession”? If so, the government action is COMPENSABLE.
- II. Did a regulatory action deprive the property owner of “all economically beneficial use” of her property “taken as a whole”? If so, the government action is a COMPENSABLE *per se* or *categorical* taking UNLESS:
 - a. The government successfully proves that the regulated activity would have been considered a public nuisance under accepted principles of property and nuisance law, OR
 - b. The property owner had no expectation of 5th Amendment protection because of limits inherent in the title when title was acquired EXCEPT “future generations, have a right to challenge unconstitutional limits on the use and value of land.”
- III. Even if the property owner did not lose all the economic value of her property, did the government action interfere with “*a reasonable investment-backed expectation*” to develop the property? The government’s action might result in a COMPENSABLE taking depending on an “ad hoc factual inquiry.”

When retreat is the better part of valor

I. Can State, local govts 'take' at-risk and repetitive loss property? **YES.**

II. *Do State, local govts have the authority to regulate existing and future coastal devt that is at increased risk from inundation, erosion and/or storm surge due to global warming even if regulation results in "loss of all economically beneficial use"?*

- a. Require disclosure and Impose risk-based assessments, exactions, perf. bonds?
- b. Establish and require or limit access to State-supported flood insurance pool?
- c. Negotiate, acquire or require setbacks, buffers from coastal features?
- d. Limit or prohibit re-building after major damage (>50%) to prevent public nuisance and/or protect PT interests in access to and use of coastal and marine resources?
- e. Limit financial responsibility to repair, replace, build public infrastructure?



When retreat is the better part of valor

- I. Can State, local govts 'take' at-risk and repetitive loss property? **YES.**

II. Do State, local govts have the authority to regulate existing and future coastal devt that is at increased risk from inundation, erosion and/or storm surge due to global warming even if regulation results in "loss of all economically beneficial use"?

- a. Require disclosure and Impose risk-based assessments, exactions, perf. bonds? **YES.**
- b. Establish and require or limit access to a State-supported flood insurance pool? **YES.**
- c. Negotiate, acquire or require setbacks, buffers from MHT, coastal features? **YES.**
- d. Limit re-building after major damage (>50%)? **YES.**

Prohibit re-building in high risk, unbuildable area?

YES.

- e. Limit responsibility to repair, replace, build public infrastructure?

YES.



Public Trust Doctrine

State duty to protect PTD interests seaward of mean high tide (MHT)

- *Rolling easements*
- Require performance bond and/or
- Require rent for occupation of PT lands

Prevent Public Nuisance

- Mandatory setbacks, buffers
- *Erosion Control Easements*
- ID unbuildable areas

SUMMARY: When retreat is the better part of valor

I. Can RI act in a precautionary manner to address devt in the coastal zone that is at increased risk from effects of global warming? **YES.**

- a. Can State, local govts 'take' at-risk private property? YES.
- b. Can govts motivate responsible development of property in high risk areas? YES.

II. Do State, local govts have the authority to regulate existing and future devt in SFHAs even if regulation results in "loss of all economically beneficial use"? **PROBABLY YES**

- a. Require disclosure and Impose risk-based assessments, exactions, perf. bonds? YES.
- b. Establish and require or limit access to State-supported flood insurance pool? YES.
- c. Negotiate, acquire or require setbacks, buffers from coastal features?
(Erosion Control, Flood Hazard Easements) YES.
- d. Limit or prohibit re-building after major damage (>50%) to prevent public nuisance and/or protect PT interests in access to and use of coastal and marine resources? YES.
- e. Limit financial responsibility to repair, replace, build public infrastructure? YES.

When retreat is the better part of valor:

Key Recommendations

GOAL: Continue to mitigate GHG emissions and pursue demand management options

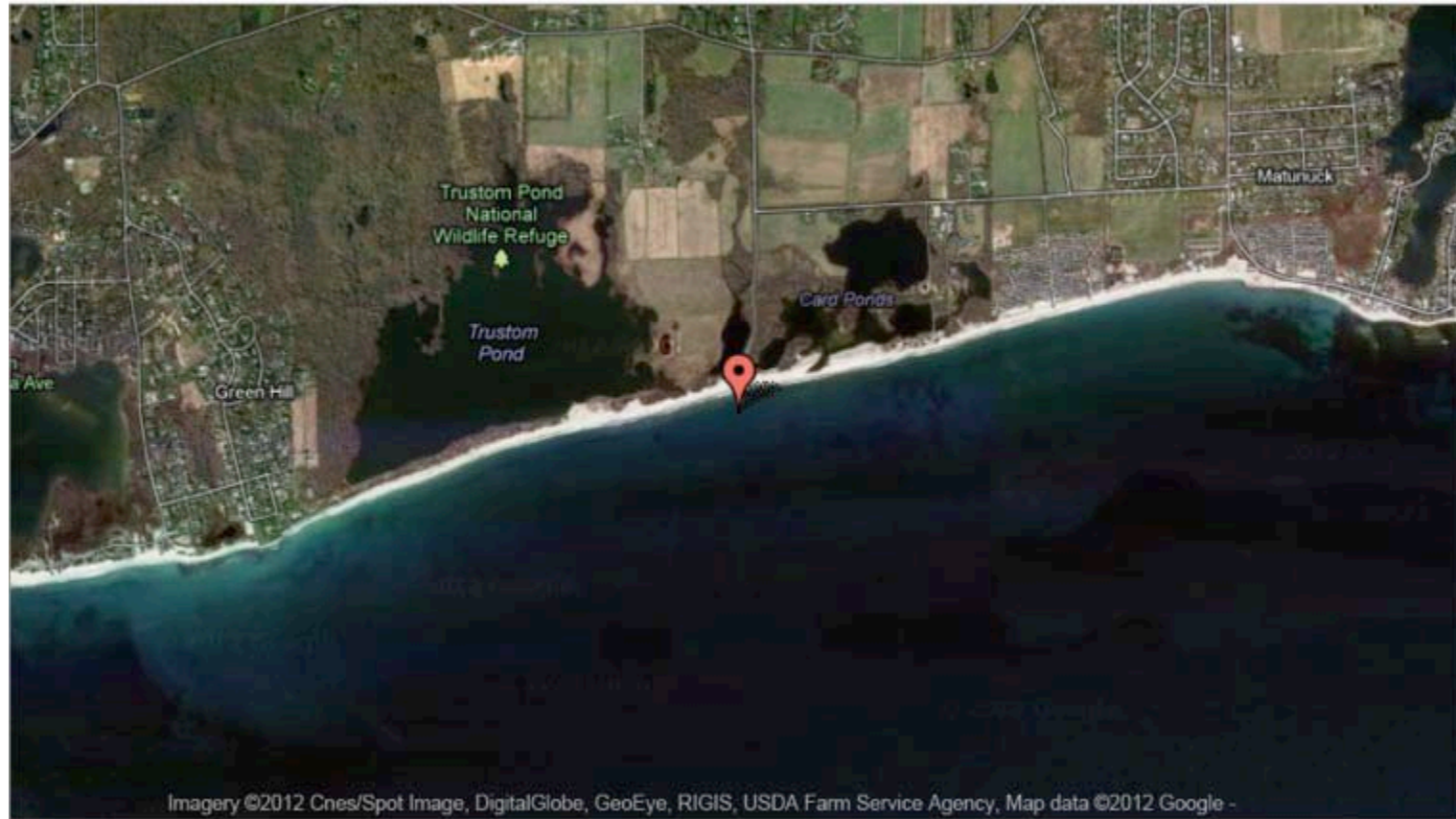
GOAL: Work toward developing a “living shoreline”

- Continue to limit ‘hard armoring’ and purchase RLPs.
- Continue to purchase coastal property, development rights and easements.
- Develop *Coastal Growth Boundary + TDR Receiving Area*.
- Enforce setbacks and other restrictions on development of *unbuildable land* using *Flood and Erosion Hazard Overlays*, cluster and mixed use zoning.
- Limit financial responsibility for repair/replacement of public infrastructure subject to repetitive loss.

GOAL: Encourage property owners, residents and businesses to retreat from the shore and coastal floodplains.

- Require property owners who live in high flood and erosion hazard zones to pay multi-year, risk-based insurance premiums; OR prohibit access to (new) State insurance pool.
- Require disclosure of FIRM designation and history of flood, storm damage and NFIP claims.
- Enable and encourage municipal governments to impose risk-based *special assessments* and/or performance bonds based on FIRM maps and *Flood and Erosion Hazard Overlays*.

Trend is not destiny. What if...

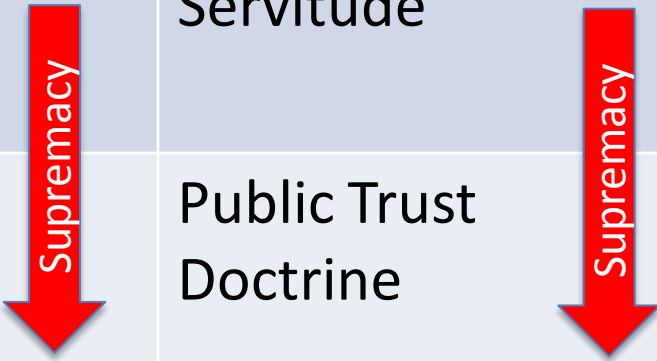


a coastal greenway or living shoreline that protects coastal property, public access, water-dependent uses, functioning ecosystems and ecosystem services was established around the perimeter of the Bay?

When retreat is the better part of valor:

Who controls coastal decision-making?

	Indirect Regulatory Control	Direct Proprietary Control
Federal	Commerce Power	Navigational Servitude
State	Police Power	Public Trust Doctrine
Municipal govt and Utilities	Delegated police power, inc. eminent domain authority	



When retreat is the better part of valor:

PDRs, Easements and Tax Incentives

- ***Rolling Easements***

See TX Open Beaches Act;
MD Critical Areas Program;
Worcester County *Coastal Bays Rural Legacy Area*; SC Beach Front Management Act (1998)

- ***Erosion Control, Flood Hazard Easements***

Zoning overlay districts +/- tax incentives



The adaptable little pink house



- Built 1890
- 1893 Moved to Fort Trumbull Area near mouth of Thames River
- 1980s restored by A.Gregory
- 1997 Sold to S.Kelo
- 2005 *Kelo v. City of New London*
- 2008 Bought by A.Gregory and moved to Franklin St, New London

<http://historicbuildingsct.com/?p=1550>