

Adaptation Initiative Reading Seminar #3
 Legal Issues in Managed Coastal Retreat
 Thursday, November 16, 2017
 Leader: Michael Gerrard

Managed Coastal Retreat: A Legal Handbook of Shifting Development Away from Vulnerable Areas, Columbia Law School, Center for Climate Change Law, 2013:
https://web.law.columbia.edu/sites/default/files/microsites/climate-change/files/Publications/ManagedCoastalRetreat_FINAL_Oct%2030.pdf

Climate change has already impacted our coastlines in the U.S. Rising sea-level and more frequent storms threaten our infrastructure and homes. Tough decisions need to be made to move this infrastructure away from the coasts. A long-term policy of managed retreat can limit a community’s exposure to coastal hazards, save lives and limit public funding expenditures on vulnerable infrastructure. This Handbook contains examples and case studies from early innovators, and raises key legal issues. It provides practical advice drawn from examples of places where managed retreat has already been conducted or is ongoing. Managed retreat has been done before, and we can learn from those cases.

Table 1. Adaptation of the Build Environment to Sea Level Rise: Spectrum of Legal Responses – Retreat to Defend (Source: Michael Gerrard)

Description	Example
Retreat	
Remove existing uses that are vulnerable	Conditions in CA’s Coastal Comm. Permits
Plan for relocation when needed	Kivalina v. ExxonMobil; Kiribati
Ban reconstruction of existing uses	Arlington v. Texas General Land Office; nonconforming uses
Disinvest in infrastructure	But: Jordan v. St. John’s County (Fla. Dist. Ct. App. 2011).
Allow only temporary uses	Tahoe-Sierra v. Tahoe Regional (US 2002)
Ban shoreline protection, beach nourishment	CA Coastal Commission; some rolling easements; New South Wales towns
Ban new uses in hazard area	Lucas v. SC Coastal Council
Inhibit financing of new uses in hazard area	(Ban mortgages from federally-insured banks)
Substantive limitations, e.g. buffers, setbacks	Nollan, Dolan
Procedural hurdles	(Require EISs in hazard areas)
Voluntary buybacks	NY, NJ after Sandy
Financial disincentives for development	National Flood Insurance Program [not]
Consideration and disclosure	CEQ’s NEPA guidelines [revoked]
Do nothing; allow shoreline to migrate inland; do not protect or relocate	NEUTRALITY Most places
Accommodate: Require new uses to be resilient	Some post-Sandy reconstruction and NYC building code revisions
Require public infrastructure to take sea level rise into account	Con Edison; NYC Third Water Tunnel; Boston’s Deer Island POTW
Publicly funded nourishment of eroded beaches	Stop the Beach Renourishment v. Florida DEP
Rock/concrete groins to restrain sand	Long Island’s north and south shores
Raise land elevation for new development	Willetts Point, Queens
Sea walls and levees	Netherlands; Japan; New Orleans (failed); lower Manhattan (eventually)
Sea barriers	Thames
Rebuild destroyed areas that continue to be vulnerable	New Orleans
Defend	

DISCUSSION

Managed retreat has mostly been discussed in the context of coastlines. There is no managed retreat policy anywhere in the world. 9 key questions that need to be addressed in setting up a managed retreat policy:

1. Retreat from where? What degree of probability and severity of hazards would justify retreat? What are habitability thresholds, and do those thresholds differ culturally?
2. When retreat? Do you retreat only after a disaster hits, or do you do it before?
3. Retreat voluntary or forced? Do people have a choice, do you ask or tell? Is it done on an individual household or community basis?
4. Retreat total or partial? Entire area, or will some uses remain? If applied, is it applied to everything or damaged structures?
5. Retreat to where? Are the places that receive people, do they have to consent? How important is it that the receiving area can support the same level of livability? Does the government use eminent domain? Should places be pre-designated as receiving zones?
6. In order to avoid retreat, what degree of adaptation will be carried out? (Ex: hard armoring of coastlines)
7. Who decides all of this? How much agency do individuals and family have?
8. What kind of compensation is provided to displace property owners? Is buyout at pre-disaster value or post-disaster value? Is the compensation enough for people to buy a new house or relocate a business?
9. Who pays? General federal taxpayer revenue; state and local governments?

See *table 1* for a list of various kinds of legal mechanisms that exist, on a spectrum from *retreat* to *defend*. There is no coherent policy at all anywhere, and there are many dueling legal incentives.

Relocation or retreat by itself sounds dramatic. But if it is one piece of a general adaptation strategy, looking simultaneously at other steps or alternatives, maybe giving some greater context can provide a different view of retreat. Retreat does not stand alone by itself.

There hasn't yet been planned retreat in the context of sea level rise, but governments have moved people. What lessons might be learned from these cases? Are those cases analogous to this? Monetary compensation isn't enough. Where to move and what happens with receiving communities – this is understudied and isn't addressed properly. We do have population movements going to big metropolitan areas, so can you create incentives to attract people to new places?

Retreat is a moral hazard that isn't priced accurately with insurance. We are talking about anywhere between 2-6 million homes that could be inundated due to sea level rise. The amount of money we would need to address that number is feasible. But we do need an accurate costing analysis of the impacts of climate change effects – not just homes, but also infrastructure, environmental contamination, livelihood impacts, lives lost, etc.

Community-Driven Migration

Retreat has worked when the community wants to get together and be relocated. So how can communities organize themselves or be organized, even if there is no initial consensus? [Oakwood Beach in Staten Island](#) is one example. The community was flooded for decades, and inundated various times. When Sandy came along, they went to Assemblymen in Albany, and convinced the Governor to set funds aside for their relocation. They essentially organized themselves to be bought out. The relocation covered a couple of blocks. The Governor's Office of Storm Recovery acquired 299 homes for a cost of \$122 million. This community model worked because

it wasn't just a one-time event. It was a discussion that happened over time, since they basically lived in a marsh that would be flooded anytime there was heavy rainfall.

This kind of voluntary buyout is unsustainable at the scale needed. The number of households that are highly vulnerable is in the millions. People should never have built in marshes or wetlands, but they have and still do. How can we get disincentives? It is difficult, especially in the United States where individual property is so important. The kind of compensation you would need is very high.

Another example of bottom-up community organization comes from the cleanup of [Long Island Sound](#), where several communities formed a consortia to cut down nitrogen. The communities came together for the purpose of protecting the sound, after a disaster in 1987.

Socioeconomic Issues

Both rich and poor live near the waterfront, but this brings another set of issues. Social fairness is different than incentive structure. In theory, pricing insurance can lead to a number for an incentive. Wealthier people might be first movers because they have the access to information, means, etc. In solutions, we need to consider what the income distribution is of people who may need to move, as well as who is owning versus renting.

Risk and Decision-Making

Rational decision making doesn't necessarily take into account sea level rise or other types of risk. One type of policy is to require disclosure. [California](#) has this for geological hazards and fault lines, so there is precedence. But disclosure becomes bottomless. Even the most knowledgeable people buy the property anyway, and go in regardless of the type of disclosure. It's a policy tool that can be better developed that might provide information. You need really accurate mapping and data at the parcel level.

The description of risk often comes up short. Tying property and value to coastal ecosystem loss may be helpful. Letting people know the other things that will be impacted – ecosystem, wildlife, etc., gives a larger picture. Otherwise everything just seems like a financial transaction. For example, in [Oakwood Beach](#), there is a plan to turn that area into a park. While there was extreme loss for the community, this still provides opportunity for growth of ecological systems. This helps frame retreat in a less negative way.

Examples

- In [New York State](#), large numbers were moved in the Catskills, as late as the 1960s.
- [Houston, Texas](#) is a textbook case, showing the contention between private rights and regulatory taking.
- There was lots of damage during Sandy in the [Howard Beach, Broad Channel](#) community, but people have come back, houses elevated. It is a working class, tightly knit community, with lots of city employees (firefighters, policeman, etc.). Housing is affordable and the neighborhood is beautiful. It's a unique part of NYC, and there's no way a community like that is going to be created somewhere else. The connection that people have with communities is strong – they live 3, 4 generations in the same place. People here will not want to move.
- In [Louisiana](#), there was contamination of land where people lived, which is covered under superfund law, so there is legal precedent when it comes to hazardous waste contamination.
- In California, [San Francisco and Oakland](#) have filed law suits against fossil fuel companies to help them pay for sea walls.

- In the [South Florida Keys and other low-lying areas](#), it is not hard to imagine a scenario where people can't get of the area if there isn't enough warning before a hurricane. There is a huge public safety risk and potential for immediate loss of life during the event.

Managed and Unmanaged Retreat

In our current system, how could we actually do this on large scale? It has only been done on a small scale, in specific contexts. The scale of the block is a manageable scale for the concept of retreat. Not quite a city or neighborhood, but still a cluster of people that can make collective action or decision. HUD has a block grant program – can we work this backwards? American mentality is all about incentives.

Land use and zoning are municipal government decisions, so there are lots of different approaches within one city, and then how do you link that to federal funding? What kind of story telling would push the narrative in government, and create coalitions of support for a national approach? How does the law need to change in order to cope with the climate to come?

The alternative to managed retreat is unmanaged retreat. We could envision a situation where sea level rise gets to be so great – property values decrease, NFIP doesn't work, federal bailouts will not be enough. Or, managed retreat on a crisis basis, on the level of large scale eminent domain, where it is done quickly. The planning exercise and the conversation is different in these different situations. It is hard to imagine that the government could ever do this on a large scale. Ad hoc sequential crises are the most likely scenario, and also the model for what is happening now. [New Orleans](#) is an example of this – the population has dropped quite a bit, but there is still rebuilding happening.

Further Reading

- Dahl, Spanger-Siegfried, Caldas (2017), Effective inundation of continental United States communities with 21st century sea level rise, <https://www.elementascience.org/articles/10.1525/elementa.234/> (includes socioeconomic analysis of persons affected by sea level rise)
- Hauer, Evans and Mishra (2016), Millions projected to be at risk from sea-level rise in the continental United States, *Nature Climate Change*, <https://www.nature.com/articles/nclimate2961>
- Lessons From Hurricane Harvey: Houston's Struggle Is America's Tale, *New York Times*, https://www.nytimes.com/interactive/2017/11/11/climate/houston-flooding-climate.html?_r=0
- Kim Stanley Robinson, New York 2140, <https://www.amazon.com/New-York-2140-Stanley-Robinson/dp/031626234X>
- Tom Anderson, This Fine Piece of Water, An Environmental History of Long Island Sound, <https://yalebooks.yale.edu/book/9780300102871/fine-piece-water>
- Trevor Houser et al., Economic Risks of Climate Change <https://cup.columbia.edu/book/economic-risks-of-climate-change/9780231174565>
- Eric Kaufman and Joaquin Matias, A Call to Action: How to Save Millions of Lives <https://www.amazon.com/Call-Action-Save-Millions-Lives/dp/1545220549>
- Risky Business, The Bottom Line on Climate Change <https://riskybusiness.org/>