MARKET-BASED ROLLING EASEMENTS TO REDUCE THE VULNERABILITY OF COASTAL COMMUNITIES IN MASSACHUSETTS*

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Rolling Easement

• Any institutional arrangement that takes away the landowner’s expectation of holding back the sea

• Prevents structural protection of some coastal lands:
  • By regulation
  • Voluntary transfer of rights to hold back the sea

• In some cases, a rolling easement would require the removal of pre-existing protective structures

• Provides the assurance that the shore or public access along the shore can migrate inland

https://coast.noaa.gov/
Rolling Easement
(Titus 2011)

• The public has access to intertidal and subtidal lands for fishing, fowling, and navigation (n.b., private rights extend to the mean low water line in Massachusetts)

• These “public trust rights” would move (“roll”) shoreward (offshore) as coastal erosion (accretion) takes place

• In the face of coastal erosion or sea-level rise, a building may find itself eventually in the intertidal zone

• Through erosion, nature has essentially “taken” the property
Massachusetts Erosion Hotspots

http://pubs.usgs.gov/of/2012/1183/figure1.html
Distribution of Risk

- Massachusetts Wetlands Protection Act comprises restrictions on constructing coastal engineering structures
  - risk of the loss of land and a structure borne by the property owner
  - Last-minute (illicit?) attempts to protect through beach scraping
  - possibility of litigation from shorefront property owners due to “passive taking” (Plum Island)

- Potential alternatives to redistribute this risk:
  - conservation easement
  - buyout
  - buyout and lease-back
Conservation Easement

• Property owners have a right to protect “grandfathered” properties on \textit{coastal banks}

• Non-grandfathered properties on \textit{coastal dunes} also have been protected in some areas (\textit{e.g.}, Plum Island)

• HPM for Plum Island suggests that, on average, a public structure adds $70K and a private structure adds $20K to the price of a shorefront property

• An entity (government agency or conservation group) could purchase the rights to protect and leave them unexercised

• {Sale of these rights might include language foregoing litigation}
Buyout (and Lease Back)

- Average (assessed) value of a Plum Island residence on the Newbury Shorefront is $780,000
- Properties could be purchased outright (government agency or conservation group): ~$50m
- Properties also could be leased back to the original owner (or another tenant)
- Property vacated when the home is inundated or damaged
- Rental for an average Newbury Shorefront home on Plum Island: ~ $2000/mo
- Total value recouped after 33 years
- Risk to the landlord of lost rent

Cost of BO/LB is area between curves
Could be significant administrative costs
Policy Choice  
(cost to government)

- Regulatory restriction on coastal engineering structures is least costly for government
  - Difficult to enforce
  - Threat of litigation
- CE > BO/LB > BO

Who bears the risks of coastal erosion?
- May limit choice of policy
- May be more efficient for the government to bear the risk

BO = Buyout
BO/LB = Buyout and lease back
CE = Conservation easement
<table>
<thead>
<tr>
<th></th>
<th>Status Quo</th>
<th>Conservation Easement</th>
<th>Buy-out</th>
<th>Buy-Out, Lease-back</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Owner</td>
<td>Enjoys coastal amenity value; bears risks of</td>
<td>Enjoys coastal amenity value; bears risks of erosion due to</td>
<td>Loses coastal amenity value but is compensated for this loss</td>
<td>Enjoys coastal amenity value; compensated for loss of coastal property; bears</td>
</tr>
<tr>
<td></td>
<td>erosion due to regulatory restrictions on the</td>
<td>inability to construct coastal engineering structures but</td>
<td></td>
<td>costs of rental; bears costs of depreciating living conditions</td>
</tr>
<tr>
<td></td>
<td>construction of coastal engineering structures</td>
<td>is compensated for these risks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Town</td>
<td>Captures portion of coastal amenity value with</td>
<td>Captures portion of amenity value with property tax;</td>
<td>Loses property tax proceeds</td>
<td>Captures portion of amenity value with property tax; property tax proceeds may</td>
</tr>
<tr>
<td></td>
<td>property tax; bears risks of emergency response and infrastructure repair (roads, sewers)</td>
<td>bears risks of emergency response and infrastructure repair (roads, sewers)</td>
<td></td>
<td>diminish with depreciation; bears risks of emergency response and infrastructure repair (roads, sewers)</td>
</tr>
<tr>
<td>State*</td>
<td>Bears risks of disaster assistance costs</td>
<td>Bears risks of disaster assistance costs; bears costs of</td>
<td>Bears cost of purchase of coastal property; bears cost of razing</td>
<td>Bears cost of purchase of coastal property; bears administrative costs of renting,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>purchase of conservation easement</td>
<td>structures; bears administrative costs of managing natural areas</td>
<td>including making tax payments; bears risk of lost future rental payments due to erosion</td>
</tr>
<tr>
<td>Nation</td>
<td>Bears risks of disaster assistance costs</td>
<td>Bears risks of disaster assistance costs</td>
<td></td>
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</tr>
</tbody>
</table>
Possible Sources of Public Funds

- MA Environmental Bond Bill
  - $110m for coastal projects (statewide)

- Federal Land and Water Conservation Fund
  - $1-3m annual Massachusetts share
  - Discussion in US Congress of proposed increase

- State storm damage buyout plan
  - $20m for buyouts (repetitive destruction)
Other Issues

- Willingness of property owners to participate
- Loss of property taxes to the town
- Administrative costs of implementing programs
- Public infrastructure (roads, sewer lines)
- Implications of partial participation
- Cycles of erosion and accretion