Adaptation to Sea Level Rise

Federal and State Approaches

Sandra S. Nichols
The Environmental Law Institute
Potential Policy Responses

1. Minimize Impacts....
   ....Mitigation

2. Create Strategies to Respond....
   ...Adaptation
Adaptive Capacity

The ability of a system to modify or change its characteristics or behavior so as to better cope with existing or anticipated external threats.
Components of Adaptive Capacity

- Vulnerability
- Risk
- Other Characteristics of the System or Resource
U.S. Geological Survey

National Hazards, Risk, and Resilience Assessment Program

• Risks to society and environment of the combined effects of such natural hazards as coastal erosion and the influence of climate variability and change.
• Developing accurate forecasts of hazard losses; increasing efforts to communicate about risks, resilience, and ongoing changes in the environment that relate to natural hazard vulnerability.
• Building a robust monitoring infrastructure that includes its Marsh Surface Elevation Network.

Reducing vulnerability in order to develop adaptive capacity.
Army Corps Coastal Buyout

In Mississippi the Army Corps is considering facilitating a retreat of residents from flood prone areas.
Other Federal Initiatives

- House Appropriations Subcommittee on Interior, Environment, and Related Agencies *Temporary Commission on Adaptation* to review science

- EPA Report called *Preliminary Review of Adaptation Outcomes for Climate Sensitive Ecosystems and Resources*

- Senators Whitehouse and Boxer proposed the *Global Warming and Acidification Coastal and Ocean Resiliency Act (S.2211)*
National Flood Insurance Program

- Repetitive loss properties make up 1% of the NFIP properties but represent about 38% of the total insured losses.
- Over 2.3 M buildings were constructed in 100-year flood plains in communities that participate in NFIP.
- By 2005, 70% of the NFIP flood maps were over 10 years old.
Proposals to Improve Federal Policy


3. Policyholder Disaster Protection Act (H.R. 164)
Proposed Amendment of NFIP

Flood Insurance Reform and Modernization Act (H.R. 1682)

• Phase out subsidies;
• Authorize rate increases;
• Increase max coverage available; and
• Require NFIP to update flood maps.
Opportunity for States

• States already provide disaster insurance
• Could states fill gaps left by the federal government?
State Responses to Climate Change

- 47 states will have climate action plans by 2008
- Alaska, Arizona, California, Maryland, Oregon, and Washington have addressed adaptation with plans or commissions.
Maryland

- Maryland Wildlife Diversity Conservation Plan (2006) recognized threat of SLR
- O’Malley’s Climate Change Commission Adaptation and Response Group working to reduce vulnerability
- Developed a catalogue of adaptation actions for the existing built environment and infrastructure
Washington

- Gregoire’s State Climate Change Challenge and Climate Advisory Team
- Coastal and Infrastructure Preparation/Adaptation Working Group
Proposals in Washington

• Develop scenarios of sea level response for different environments
• Limit armoring, increase setbacks, restore shorelines, remove dikes
• Improve processes for siting new construction in vulnerable areas
• Increase resilience
  – Set back development
  – Protect key geomorphic processes
• Identify critically vulnerable sites, areas, and settings
  – Natural places AND built environments
  – Develop creative funding mechanisms for acquisition
• Anticipate responses that will be driven by crises
• Where engineering is inevitable, be imaginative
California

- Schwarzenegger commissioned *Preparing for the Impacts of Climate Change in California: Opportunities and Constraints for Adaptation* (California Climate Change Center, 2006)
- San Francisco Bay Conservation and Development System mapped areas vulnerable to SLR for adaptation planning
- California Energy Commission published *Climate Change Impacts and Adaptation in California* (2005)
Other States Adapting to SLR

- Alaska
- Connecticut
- Maine
- Massachusetts
- New Jersey
- New York
- North Carolina
- Oregon
- Rhode Island
- South Carolina
- Texas
- Virginia
Concerns for the Future

• Takings claims
• Successful adaptation requires interjurisdictional cooperation