

GEORGETOWN LAW

Georgetown State and Federal Climate Resource Center

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GEORGETOWN CLIMATE CENTER

The Georgetown State-Federal Climate Resource Center

Coastal adaptation in the U.S.:

A look at emerging state and federal proposals

November 9, 2009

Coastal Adaptation in the States

1. What the States Are Doing

- California, Maryland and Florida

2. Legal Barriers

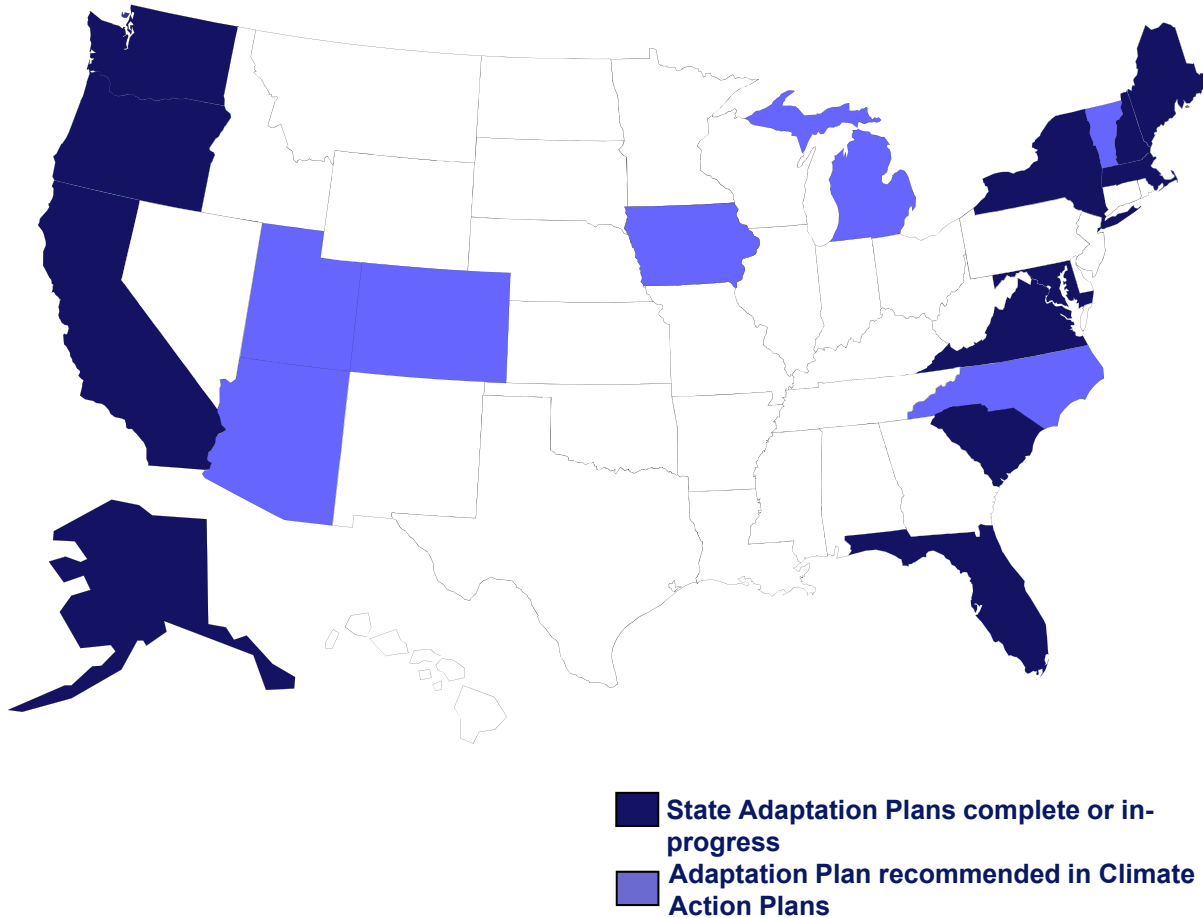
3. State-Relevant Adaptation Provisions of the Congressional Bills

- Waxman-Markey (House) and Kerry-Boxer (Senate)

4. The Federal Government Role

Adaptation Planning Efforts

12 states have started or completed adaptation planning



Adapted from Pew Center on Global Climate Change

States – Adaptation Planning Areas

State	Agriculture	Biodiversity / Ecosystem	Economic Systems	Oceans / Coastal	Forestry	Emerg Prepared / Public Health	Infrastruc-ture	Water
AK	✓	✓	✓	✓	✓	✓	✓	
CA	✓	✓		✓	✓	✓	✓	✓
FL		✓		✓		✓	✓	✓
MA		✓	✓	✓		✓	✓	
MD ¹		✓		✓		✓	✓	
NH	✓	✓	✓	✓		✓		✓
NY ¹		✓		✓				
OR		✓	✓			✓	✓	
VA ²		✓		✓		✓	✓	✓
WA	✓			✓	✓		✓	✓

¹ MD and NY are limited to addressing statewide issues associated with the impacts from sea level rise.

² VA's plan also addresses the Insurance sector.

Source: T.Cruce for the Georgetown Climate Center

Coastal Impacts

Coastal sectors of state adaptation plans primarily address impacts caused by sea level rise and increased storm surges and flooding:

- Impacts to infrastructure (transportation and utilities)
- Impacts to private property
- Impacts to public health and safety
- Impacts to habitat and biodiversity
- Economic impacts to water-dependent industry and tourism

Policy Objectives – Planned Retreat

State adaptation plans recommend adoption of a planned retreat policy:

- Avoid future hazards and prevent impacts
- Prioritize infrastructure for protection
- Prioritize natural systems for preservation
- Plan now for the near, medium and long terms
- Increase resilience

Policy Options for Addressing SLR

Carrots:

- Tax incentives
- Acquisition of threatened properties
- Funding to local governments



Policy Options for Addressing SLR

Sticks:

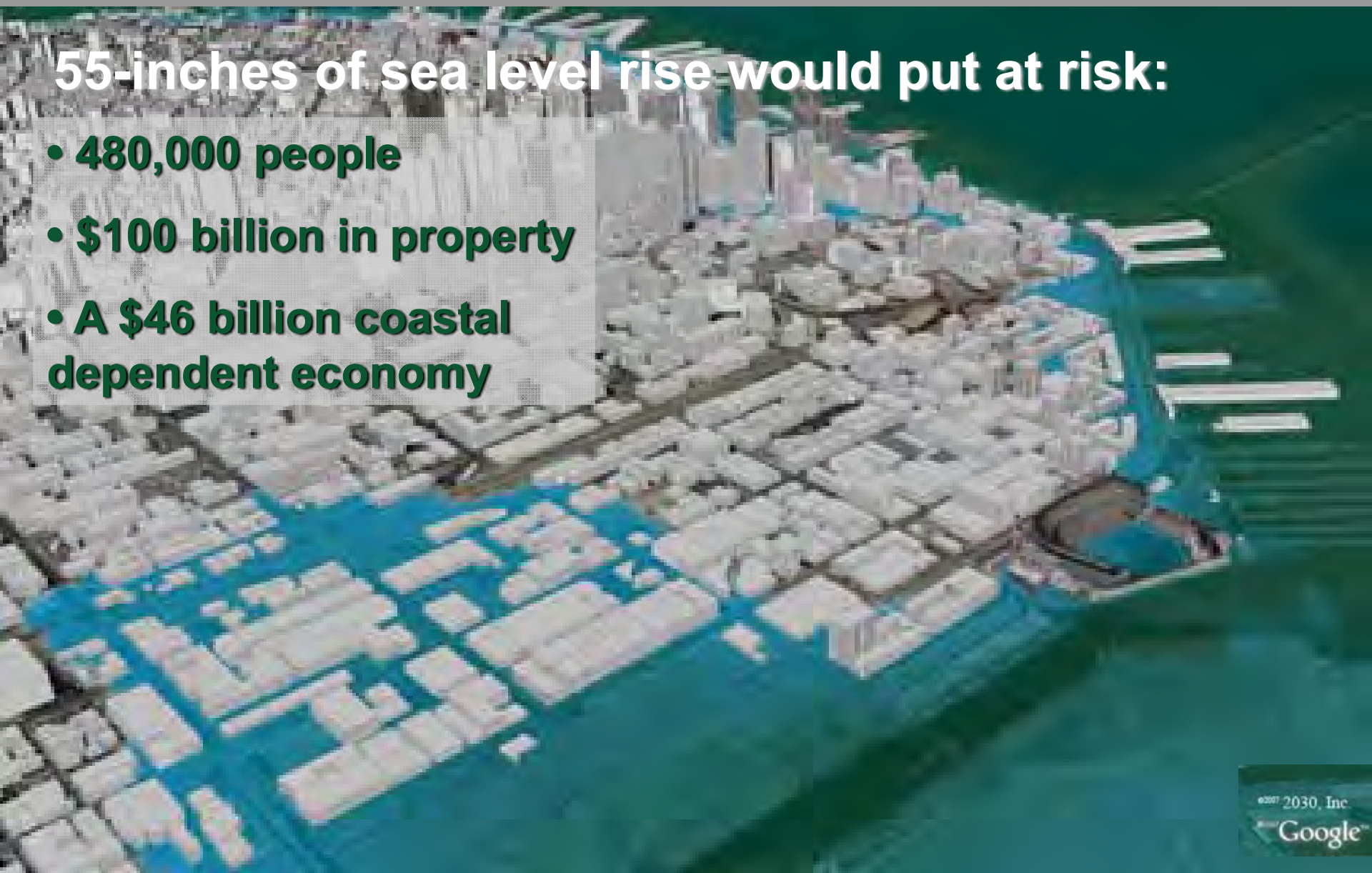
- Limit development in threatened areas
- Limit state expenditures



Example: California – What's at Risk

55-inches of sea level rise would put at risk:

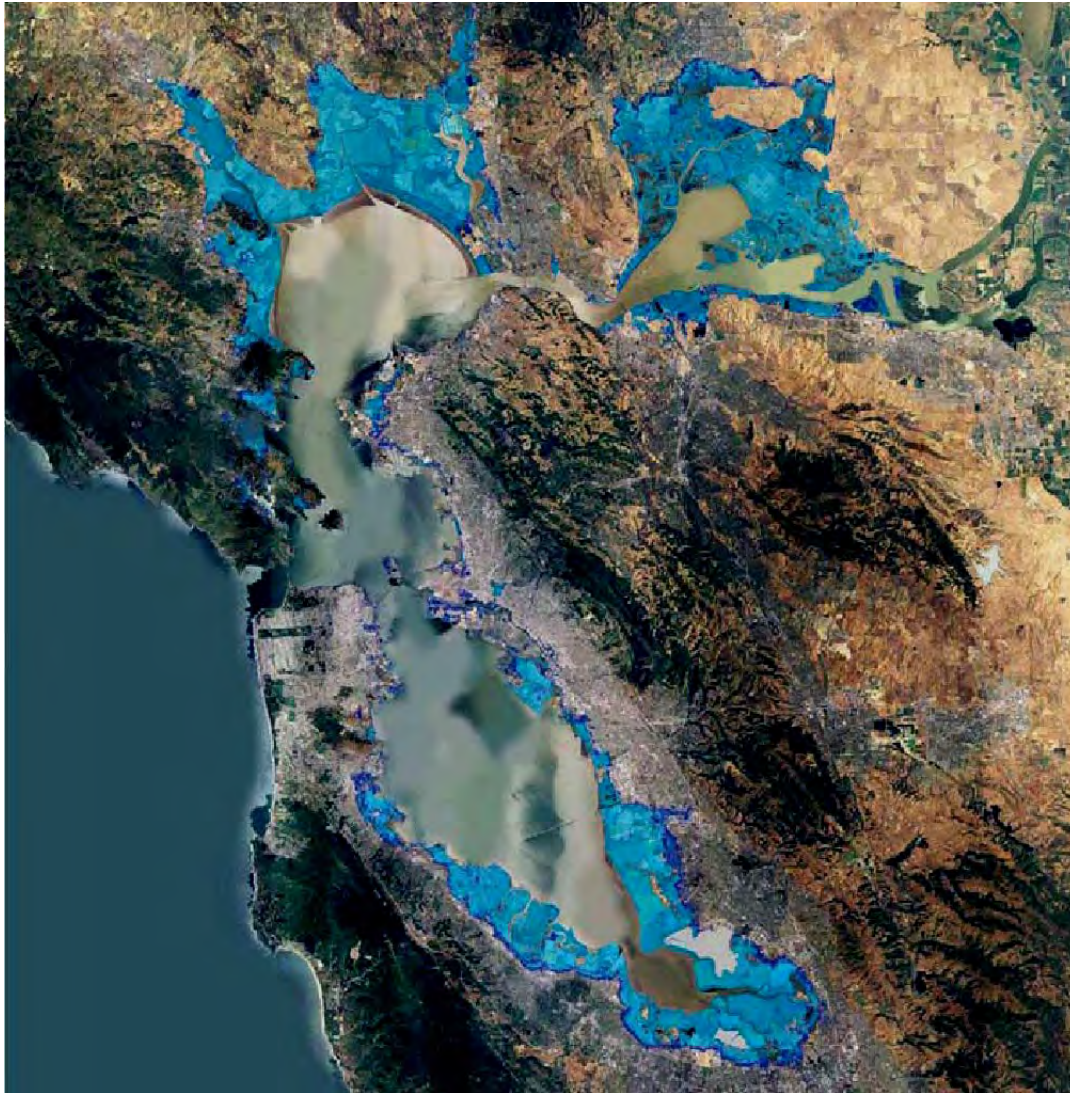
- **480,000 people**
- **\$100 billion in property**
- **A \$46 billion coastal dependent economy**



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Example: California Sea Level Rise Impacts



In San Francisco Bay, a sea level rise of 55-inches by 2100 is estimated to put 270,000 people and \$62 billion in economic resources at risk of flooding.

Source: San Francisco Bay Commission, 2009

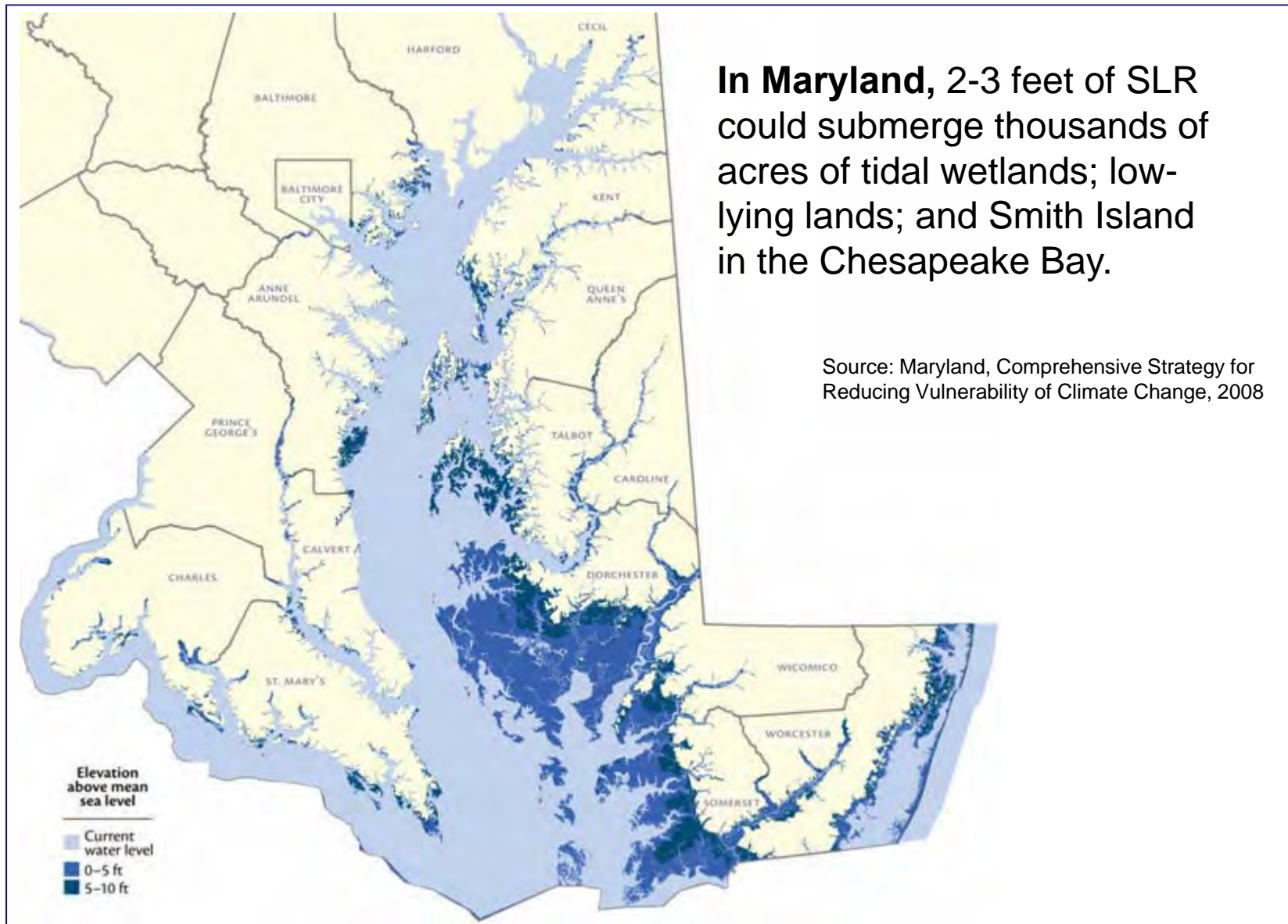
Example: California – The Stick Approach

California's Adaptation Plan recommends that local governments incorporate SLR into land use regulations:

- Consider SLR in land use plans
- Limit development in threatened areas (using setbacks, buffers and rebuilding restrictions)
- Cluster development in upland areas
- Update building codes to require structures be more flood-resilient



Example: Maryland – What's at Risk



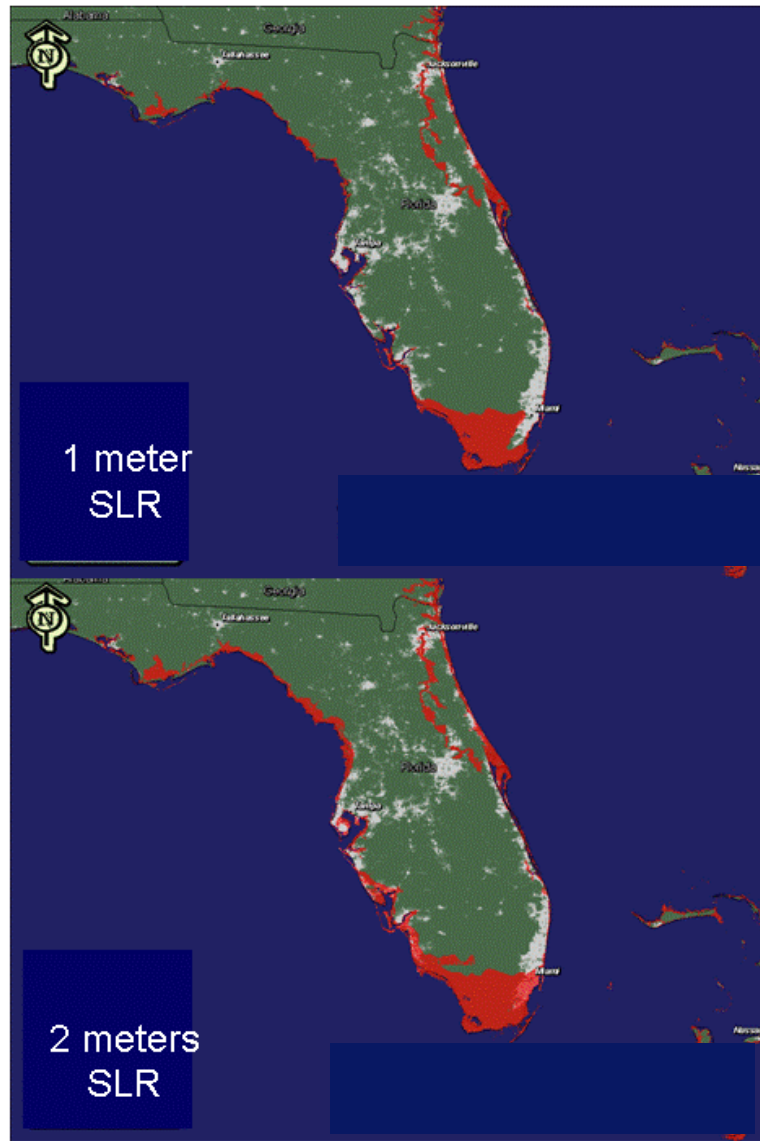
Example: Maryland – Carrots & Sticks

Maryland is working to protect its natural resources from SLR impacts

- Living Shoreline Protection Act
- Prioritizing property for protection
- Guidance to locals



Example: Florida - Sea Level Rise Impacts



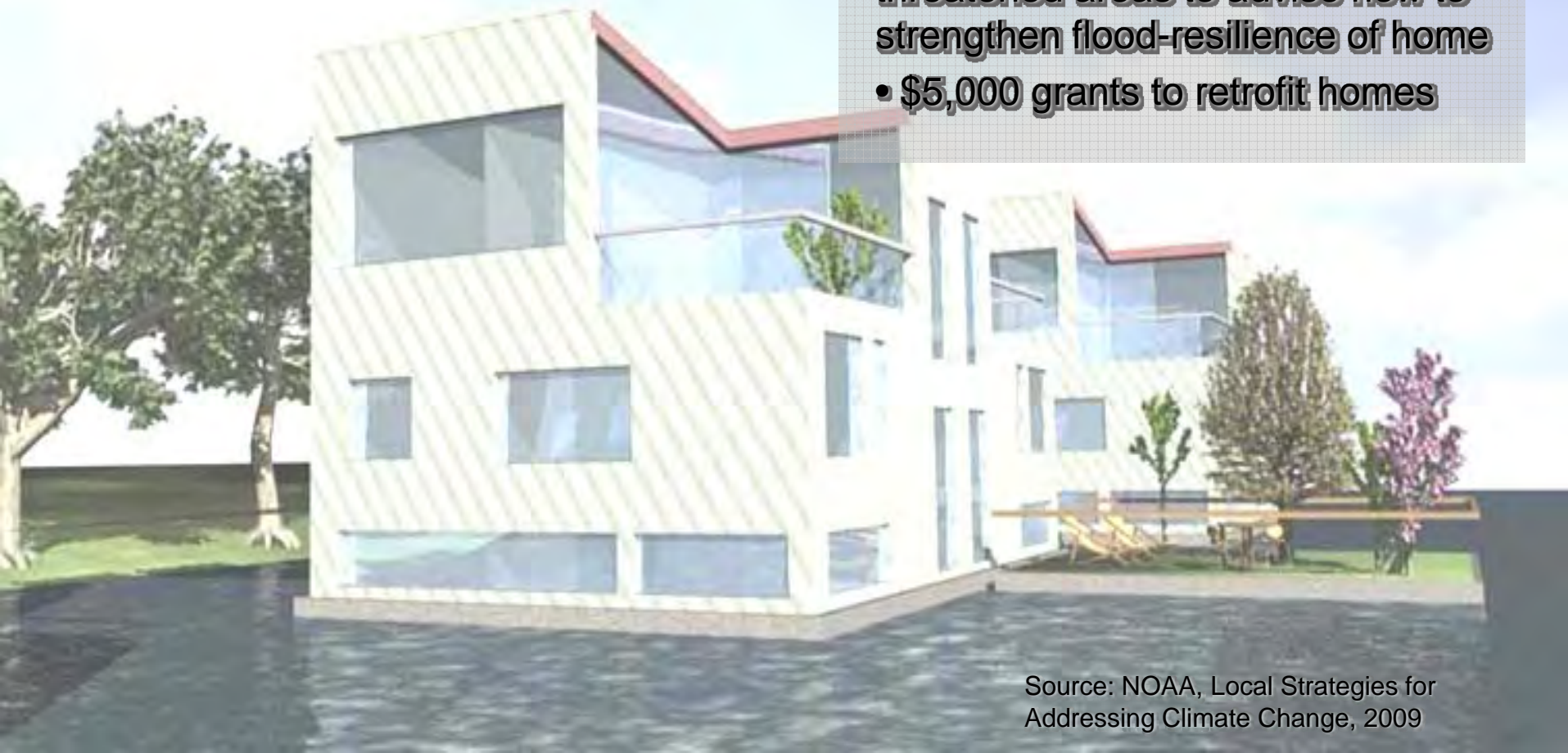
1 meter inundates the Everglades and Cape Canaveral

2 meters inundates Miami and most of Florida's Gulf Coast

Example: Florida – The Carrot Approach

Florida Flood Buyout and Home Elevation Program

- Home inspection of properties in threatened areas to advise how to strengthen flood-resilience of home
- \$5,000 grants to retrofit homes



Source: NOAA, Local Strategies for Addressing Climate Change, 2009

Legal Barriers to Adaptation

- No explicit delegations of authority
- Substantial evidence needed to justify increased regulation
- Potential Constitutional “takings” challenges

Federal Role for Adaptation?

Research and Development

- Ongoing climate science
- Improved modeling of impact projections

Policy and Regulation

- Incorporate SLR and erosion impacts in floodplain maps under National Flood Insurance Program
- Encourage state and local governments to consider sea level rise in Coastal Management Programs through federal funding under Coastal Zone Management Act
- Consider climate change impacts in Environmental Impact Assessments

Coordination / Partnerships

- Provide coordination across governments, agencies, academia, and private sector for research, planning and implementation. Align federal policies with state adaptation policies

What the Feds Are Doing – The Carrot

Funding for State Adaptation Planning

Both federal bills distribute auction allowance proceeds to states for adaptation planning and require that states adopt adaptation plans

	Waxman/Markey (W/M)	Kerry/Boxer (K/B)
State Adaptation Plans	To be eligible, requires states to have State Adaptation Plan by 2015	Climate Change Response Plan required by 2012
Natural Resources Adaptation Plans	Requires development of Natural Resources Climate Change Adaptation Strategy	Requires development of Natural Resources Climate Change Adaptation Strategy



What the Feds Are Doing – The Carrot

Federal Grant Programs

Funds for specific adaptation activities

	W/M	K/B
Water Systems	None	EPA to provide funds for state water system adaptation projects.
Flood Control	None	EPA to provide funds for state flood control, protection, prevention and response projects.
Coastal	None	EPA to provide funding to coastal states to plan for and address impacts of climate change on coastal watershed.





What the Feds Are Doing – The Carrot

Federal Research and Information Programs

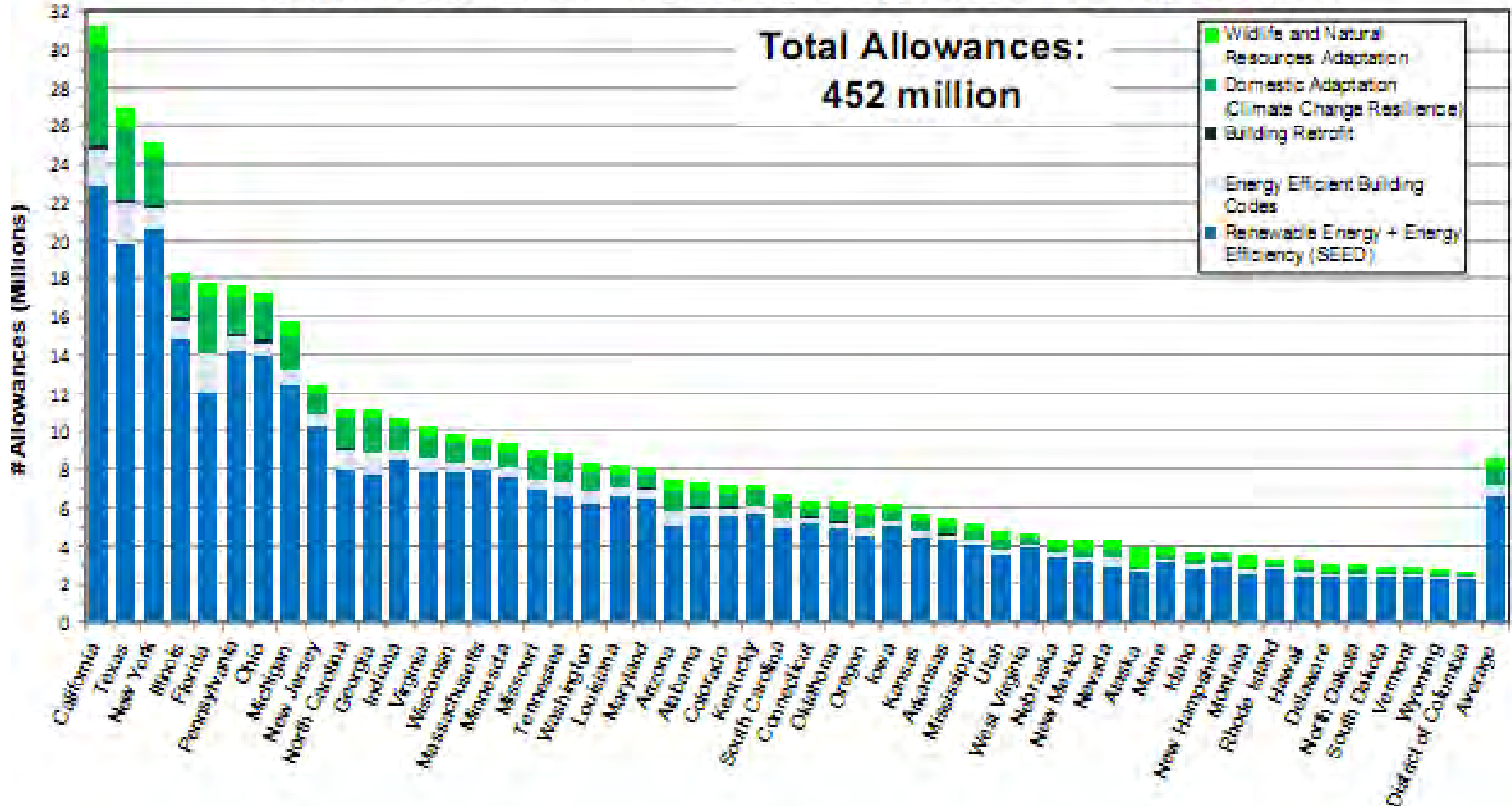
Federal programs to make research, information and support available to state and local governments

	W/M	K/B
National Global Change Research Program (USGCRP): to coordinate Federal research activities and make research and information accessible	√	
National Climate Service (NOAA): to provide weather data, forecasts and warnings	√	√
Adaptation Science and Information Program (NOAA/USGS): to provide science, information and technical assistance to assess and address impacts to natural resources	√	√
Drinking Water Utilities Research (EPA, Commerce, DOE, Interior): to fund research on the impacts to drinking water utilities to assist utilities in adaptation efforts		√



What the Feds Are Doing – Allowances

Allowances to States for Renewable Energy, Energy Efficiency, and Adaptation (2016)



What the Federal Government Can Do

Policy and Regulation

CZMA: Update the Coastal Zone Management Act (CZMA) to incentivize states to account for SLR in Coastal Management Programs

NFIP: Require FEMA to account for SLR in flood-maps created under the National Flood Insurance Program Act



Georgetown Climate Center's Focus

... in the adaptation arena:

- Federal legislative analysis
- Working with state governments to provide law and policy analysis to identify and eliminate barriers to adaptation
- Adaptation Clearinghouse – a toolkit of resources for adaptation planning

Adaptation?



Contact Information

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