Roadmap for Adapting to Risk Training

Metropolitan Washington Council of Governments

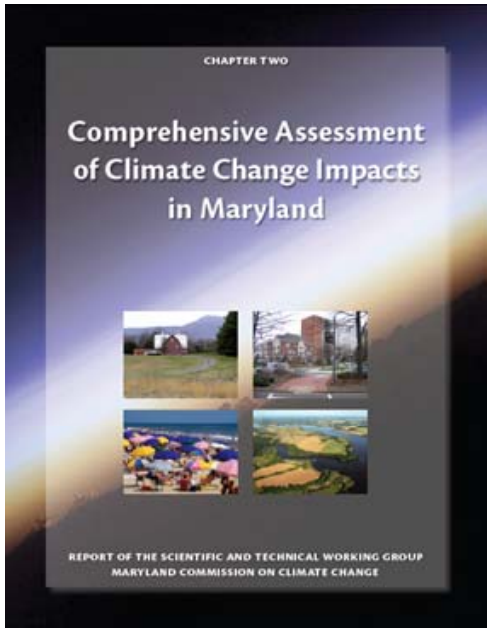
Zoë Johnson, Office for a Sustainable Future

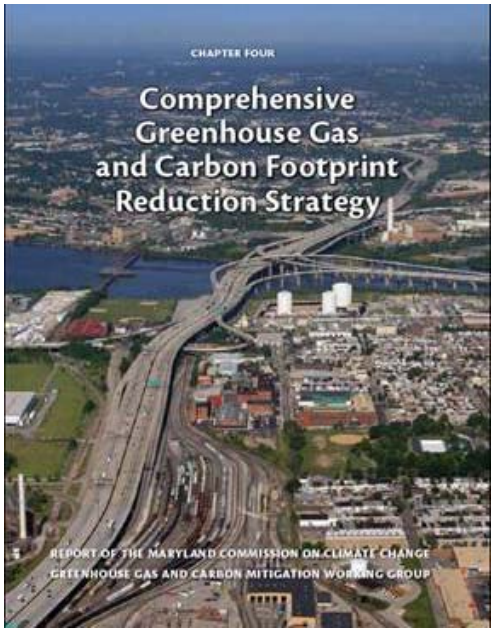
Climate Change in the Maryland
A 2100 Snapshot

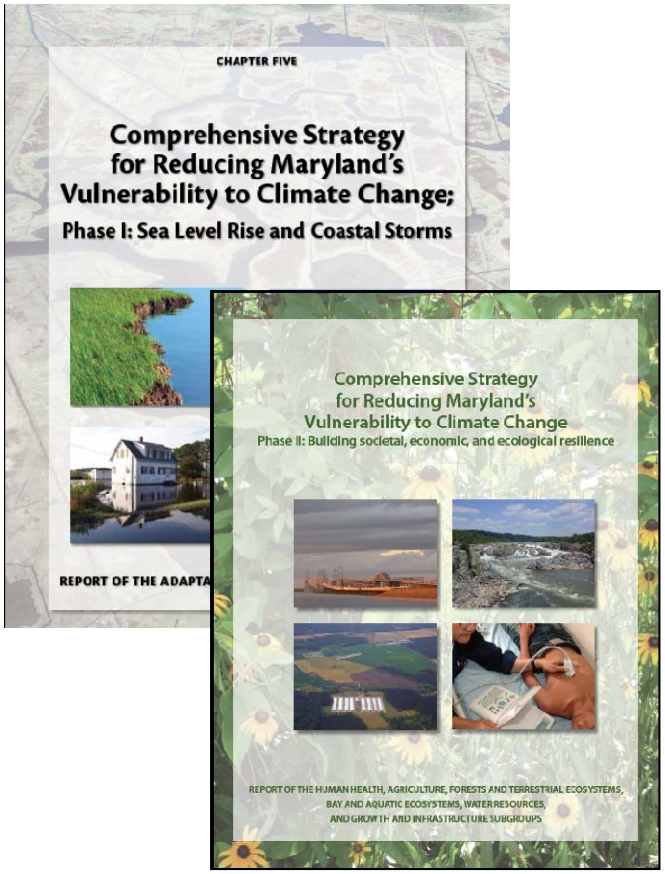
- ✓Sea Level Rise: + 3- 4 feet (1 to 1.5 meters)
- ✓Temperature: + 4 - 7 degrees F
- ✓Annual Precipitation: -10% to +20%
- ✓Spring Runoff: Higher
- ✓Summer Runoff: Lower

Global Climate Change = Real Consequences

Maryland Climate Action Plan







Sector-Based Adaptation Planning

Adaptation Planning Process

Review state of the science

Assess climate vulnerability

Identify critical information gaps

Consider and prioritize key issues of concern

Explore potential adaptation strategies

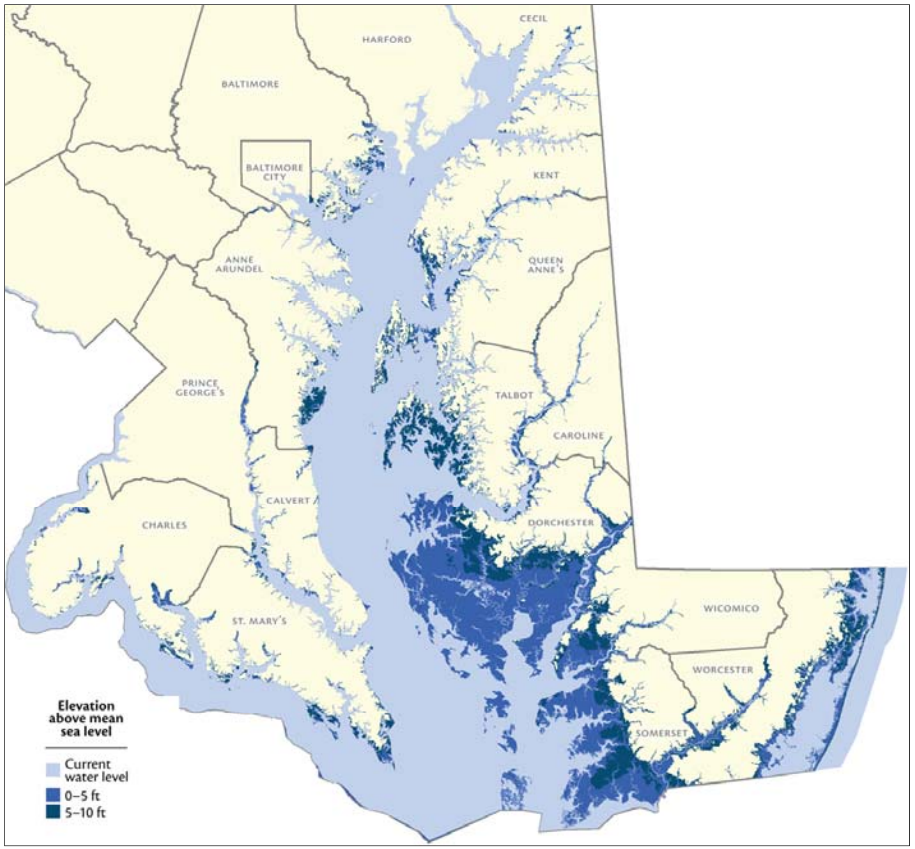
Evaluate adaptation infrastructure (institutional framework)

Identify opportunities & mechanisms to affect change

Recommend action strategies (short, medium long-term)

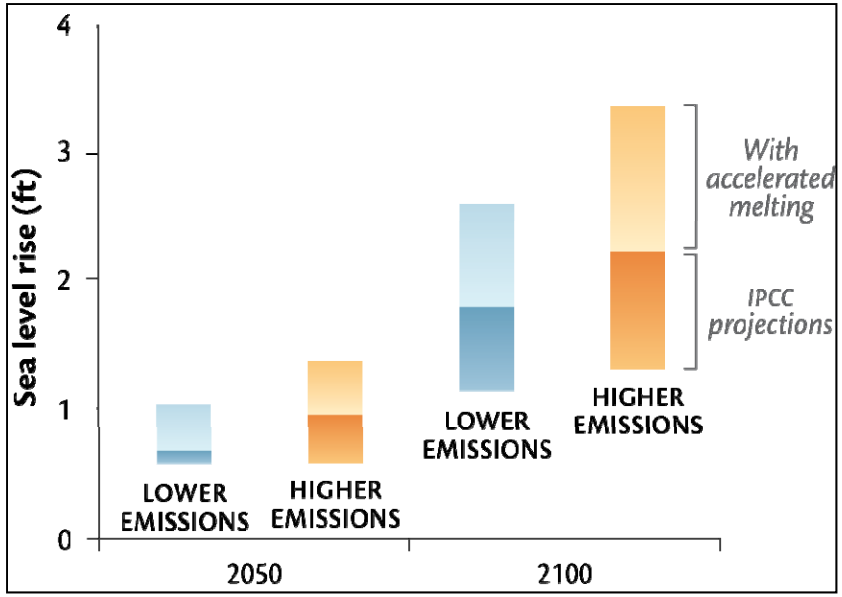
Strategy Development: An integrated approach

The Basics: Assess State-wide Vulnerability



Maryland's Risk from Sea Level Rise

Future Projections



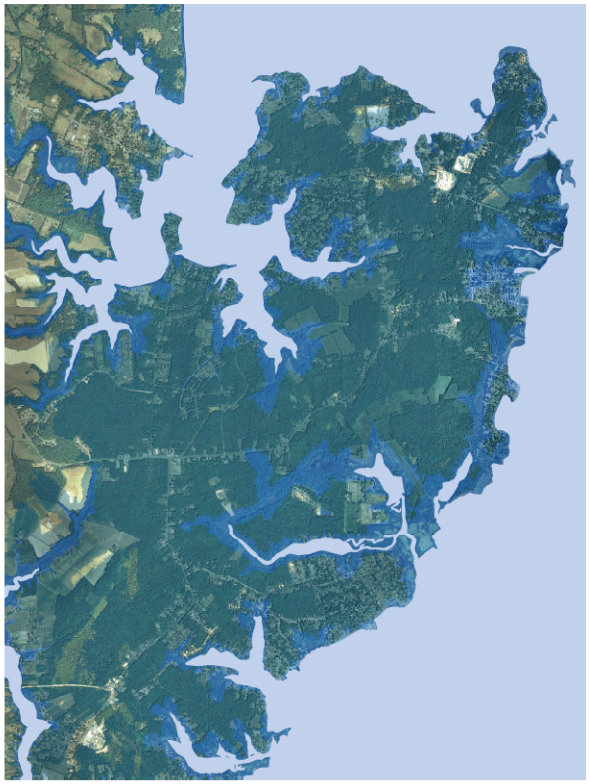
Drilling Down:
Assess Vulnerability at the Community- Scale

MARYLAND
Smart, Green & Growing

Annapolis

Crisfield

Shady Side



Elevation above mean sea level

- Current water level
- 0–5 ft
- 5–10 ft

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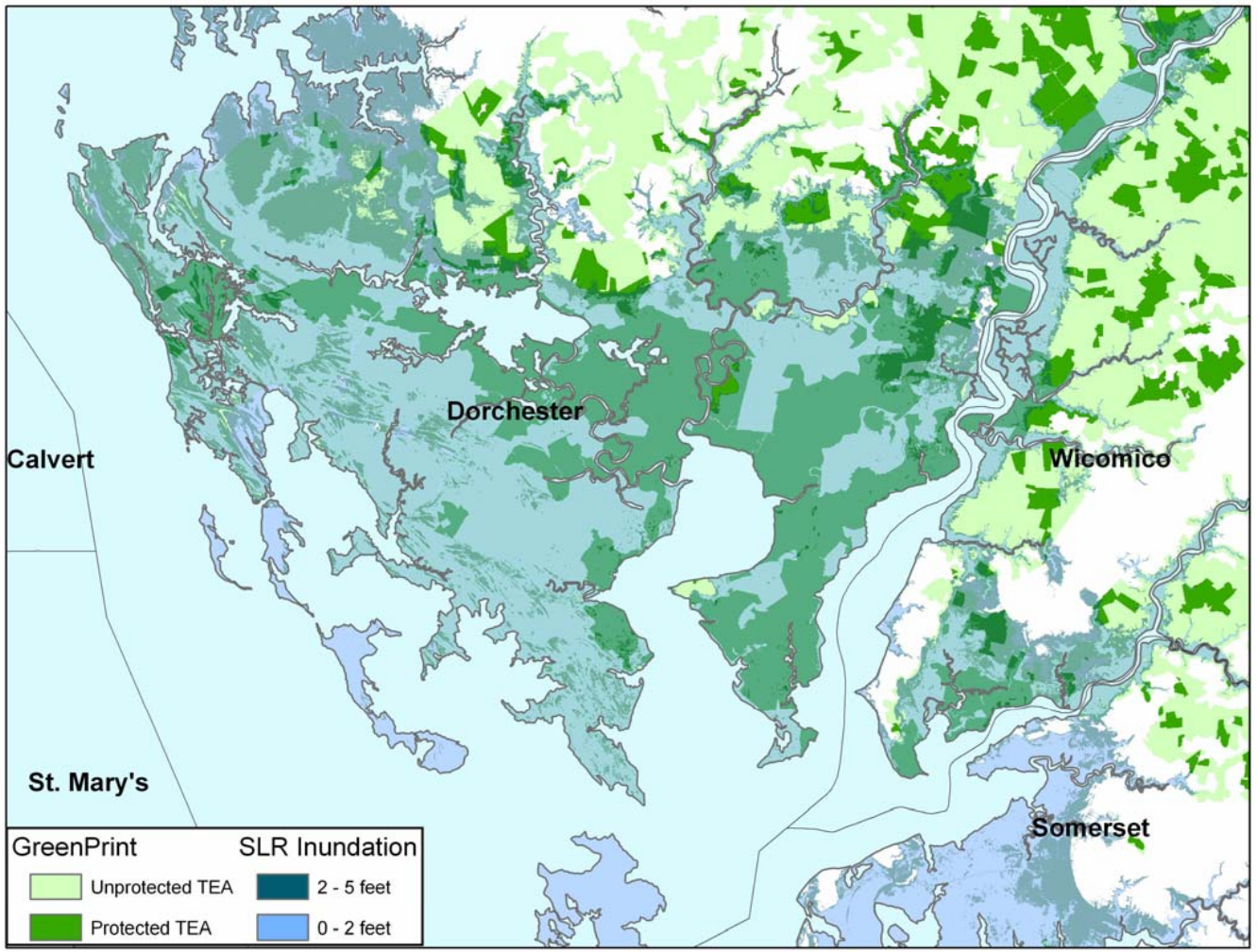
Land Use Planning:
Identify coastal hazards & vulnerable populations

Shoreline Erosion and Change

Erosion Vulnerability

Natural Resource Management:
Assess potential loss of coastal ecosystems



Source: MD DNR (2010)

Transportation Planning: Identify infrastructure at risk

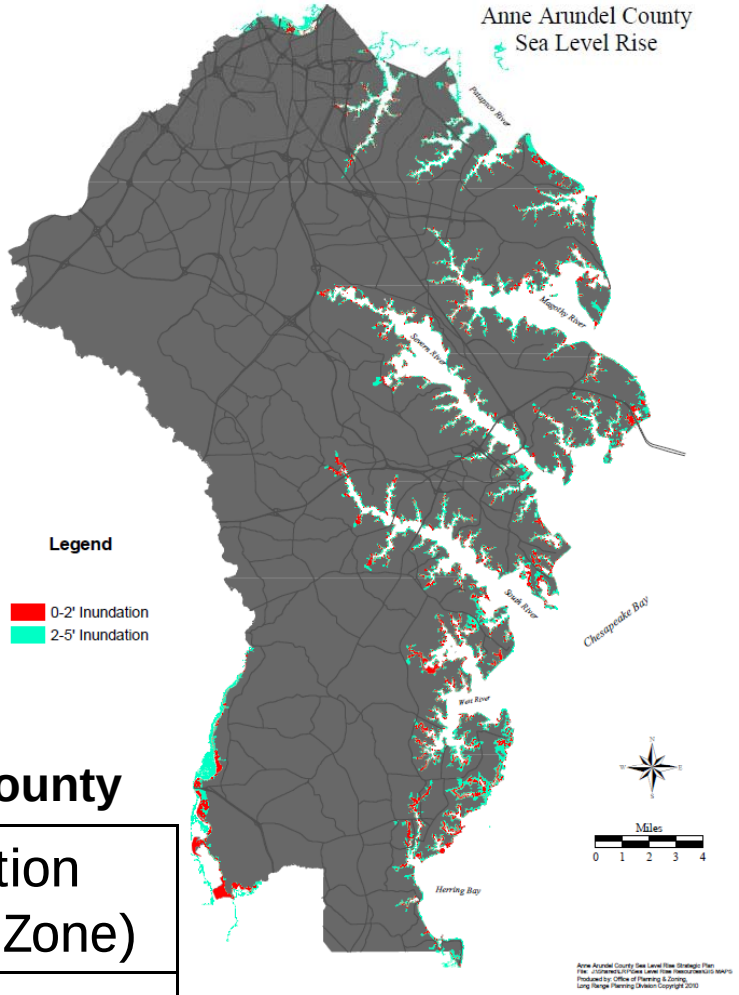
- **Assessment of State Maintained Roads that require further evaluation for impacts due to varying increases in sea-level**
  - 2 ft. – 156 miles / 93 structures
  - 5 ft. – 371 miles / 132 structures
  - 10 ft. – 792 miles / 196 structures

- **Recommendations/Next steps**
  - Must consider more than sea-level rise – need to plan for more frequent & severe storms
  - Must research & consider new construction and design elements
  - Prioritization of assets must consider emergency evacuation planning and system redundancy

MD State Highway Admin (2010)

Human Health & Safety: Identify septic systems in SLR inundation zones

- Septic systems located less than 2 feet above mean sea level are at risk of sea level rise inundation in the next 50 years.
- There are thousands of existing systems in this zone across the state (5,206 in Anne Arundel County alone).
- Placement of additional systems in this zone should be avoided.



Vulnerable Septic Systems in Anne Arundel County

0 – 2 ft Inundation (50-Year Impact Zone)	0 – 5 ft Inundation (125-Year Impact Zone)
5,206	7,238

Source: AA County (2010)

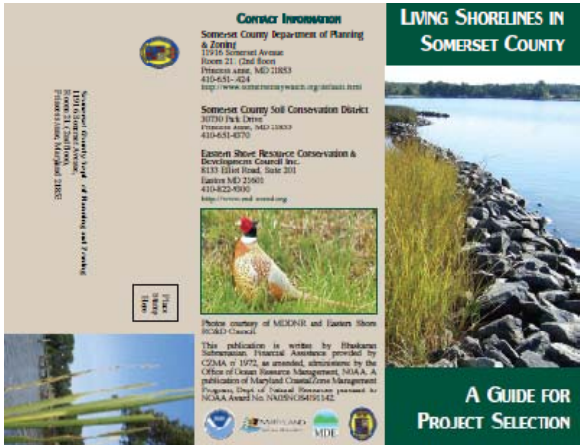
Historical, Archaeological, and Cultural Resources: Assess Vulnerability & Loss

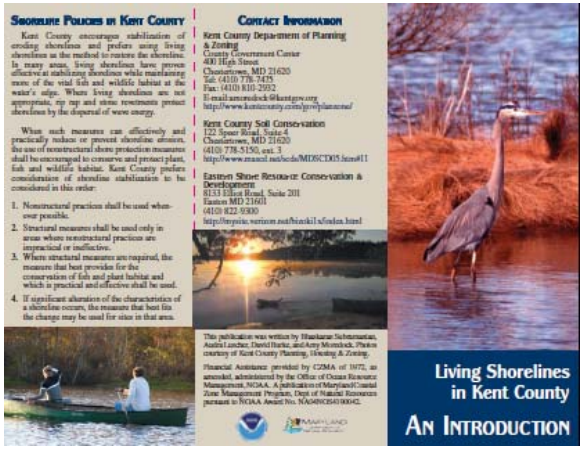
- More than 12,600 archeological sites have been inventoried statewide
- 2539 archeological sites are potentially vulnerable within the 0-5 ft boundaries. This represents 20% of all recorded archeological sites statewide, and 32% of all of the sites recorded in the coastal counties studied.
- The types of sites represented are predominantly prehistoric, ranging from Paleoindian to the contact period, but nearly a third have historic components, including 57 with identified 17th century components.
- Most at risk:
  - Paleoindian (9,000-11,000 BC)
  - Contact Period and 17th Century
  - Total of 228 sites statewide
  - 12 are already partially submerged

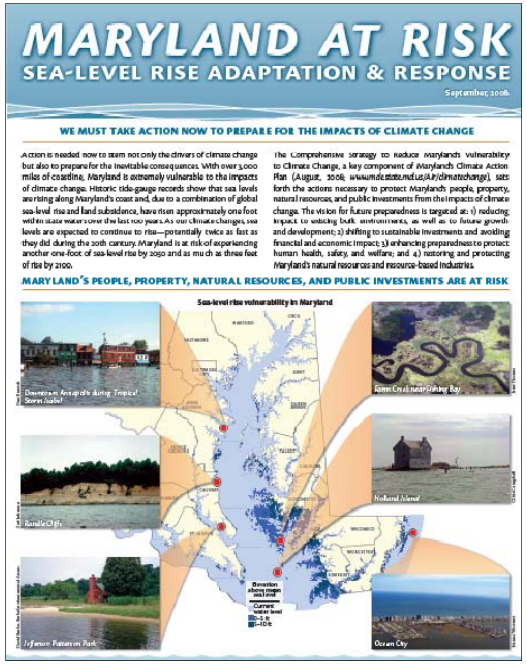
Source: Maryland Historic Trust (2010)

Communicating Risk: Visualize Impacts

Advocacy: Promote Sound Solutions







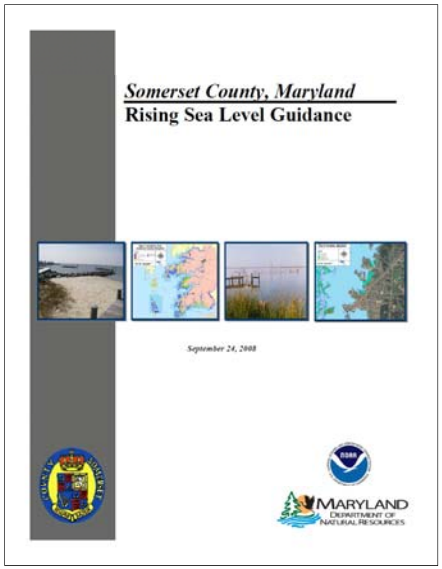
Educational Panels

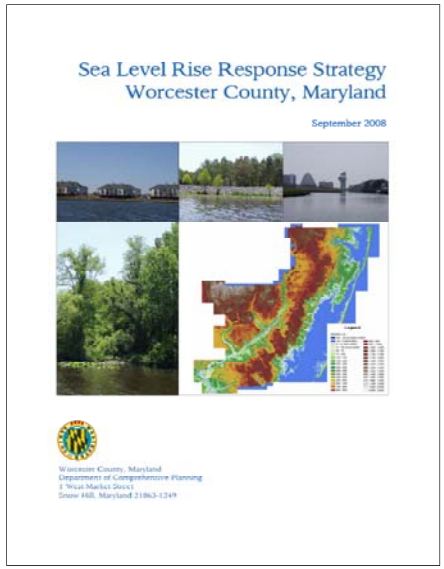
Pamphlets

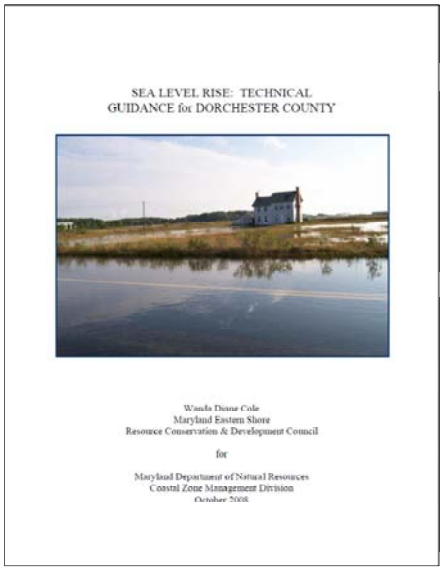
Publications & Fact Sheets

Adaptation Toolbox: Providing technical & financial assistance

The Coastal Communities Initiative (CCI) competitive grant program provides financial and technical assistance to local governments to promote the incorporation of natural resource and/or coastal management issues into local planning and permitting activities.

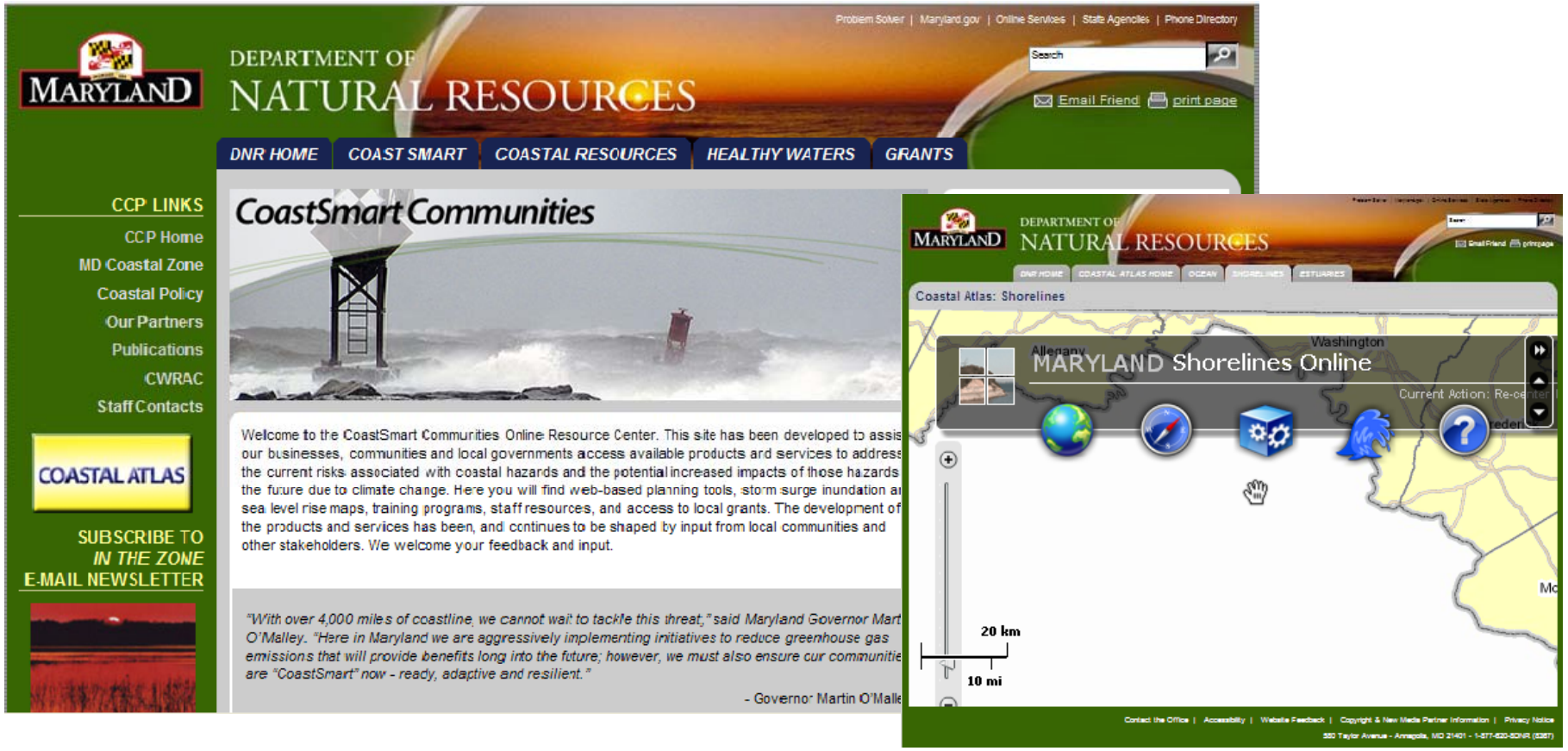






Online Resource Center: Pulling it all together

A single source for available products and services to help local communities address the current risks associated with coastal hazards & climate change



Acknowledgements:
It takes a collective effort

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