



MARYLAND COMMISSION • on • CLIMATE CHANGE

Maryland is Planning for Sea-level Rise

How sea-level rise and flooding could affect you

SEA-LEVEL RISE PREDICTIONS

As the global climate warms, the water around Maryland's coasts is slowly but steadily rising. With more than 3,100 miles of shoreline and about 70 percent of residents living within the coastal zone, Maryland is very susceptible to sea-level rise, which threatens property and the economy. The Maryland Commission on Climate Change's Scientific and Technical Working Group estimates that Maryland shorelines could see up to a 2 foot increase in sea level (over 2000 levels) by 2050 and possibly more than 4 feet by 2100 if global emissions of heat-trapping gases are not dramatically reduced.

What can we do to meet this challenge? The Commission's Adaptation and Response Working Group is developing a comprehensive strategy for reducing Maryland's climate change vulnerability, including short and long-term measures to plan for and adapt to sea-level rise. In addition, the Commission is recommending actions to reduce greenhouse gas emissions to help slow the rate of sea-level rise in Maryland.

According to a Maryland Emergency Management Agency report, between 1993 and 2010, coastal storm events accounted for \$109 million in property damage, \$193,215 in crop damages, one death and 201 injuries.

Maryland's balanced approach to climate change includes improvements to the economy, new and retained jobs and continued progress in reducing greenhouse gas emissions.

FLOODING IN MARYLAND



In 2003, Hurricane Isabel caused historic damage to downtown Annapolis: A total of 15 local businesses and more than 570 homes were declared uninhabitable due to major flood damage. The National Weather Service estimated over \$400 million in damage state-wide.



The second most costly hurricane in the United States, 2012's Hurricane Sandy was a powerful reminder of the coastal hazards of storm-induced flooding and erosion. While other states were harder hit, damages from Hurricane Sandy throughout Maryland cost more than \$41 million.



Eastern Shore communities in Dorchester and Somerset counties experience regular flooding during high tides. According to Dr. Ming Li at UMCES, models show that by the end of the century more than half of Dorchester County, the third largest county in Maryland in terms of land area, could be under water.

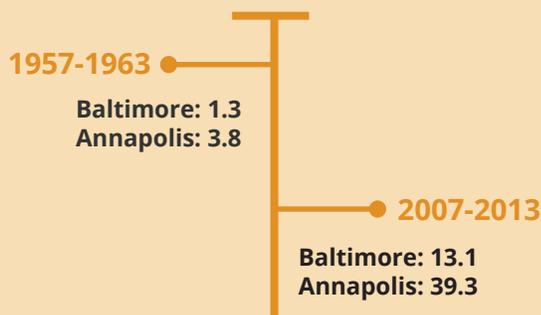




HOW WILL THIS IMPACT YOU?

Rising sea levels are causing increased nuisance flooding — recurrent flooding at high tide not associated with storms — across the East Coast, especially in Maryland. According to a 2014 report by the National Oceanic and Atmospheric Administration, Annapolis (#1) and Baltimore (#2) rank at the top of a list of 10 U.S. cities where nuisance flooding is getting worse.

NUISANCE FLOODING DAYS: AVERAGE DAYS PER YEAR



Nuisance flooding can overwhelm storm drains, close roads, compromise infrastructure and damage private property.

According to the Maryland Department of Transportation's State Highway Administration (MDOT SHA), Maryland has approximately 7,920 linear miles of roadways. Of those that are state-maintained, 158 miles will be threatened by sea-level rise in 2050, and 356 miles by 2100. MDOT SHA will use this vulnerability data for planning and assessment to determine potential adaptation measures for infrastructure.

HOW MARYLAND IS INCREASING RESILIENCE TO SEA-LEVEL RISE AND FLOODING

- Building for the future: All state agencies must consider the risk of coastal flooding and sea-level rise when they design capital budget projects; in coastal flood hazard areas, new and rebuilt state structures must be elevated two or more feet above the 100-year base flood level (2014 Maryland law).
- Helping local governments adapt: Maryland Department of Natural Resources Community Resiliency Grants provide financial and technical assistance to local governments to help address the impacts of hazards, including localized flooding, storm events and sea-level rise.
- Controlling erosion and improving shoreline habitat: Maryland passed the Living Shorelines Protection Act in 2008, which helps to reduce shoreline erosion of waterfront properties, promote natural coastal processes and enhance habitat creation and restoration.
- Protecting our state's history: With funding from the National Park Service Hurricane Sandy Disaster Relief Fund, the Maryland Historical Trust has awarded seven grants throughout the state to help protect historic landmarks and archeological sites from future storms through the Cultural Resources Hazard Mitigation Planning Program.

Increasing our resilience to sea-level rise and flooding will protect our health, property and the economy.



WHAT CAN YOU DO ABOUT SEA-LEVEL RISE AND FLOODING?

- Learn about how coastal habitats can reduce flooding and erosion impacts.
- Consider proper elevation on new structures to avoid flooding.
- Build living shorelines and support efforts to restore natural shoreline habitats.

For more information, including meeting calendars and contact information, please visit the Maryland Commission on Climate Change website at:

www.mde.maryland.gov/mccc