Updated Sea-Level Rise Projections for Maryland: 2018

Background

Sea-level rise projections for Maryland through the 21st Century were included as part of the Maryland Commission on Climate Change's 2008 *Climate Action Plan* and were used in the Commission's adaptation planning. These projections were updated under the auspices of the Commission's Scientific and Technical Working Group in 2013 to bring into consideration the emerging scientific literature on sea-level rise, as well as the perspectives of regional experts outside of Maryland. The 2013 updated projections have been used to guide state construction and community assistance under the CoastSmart Program.

In 2015 the Maryland General Assembly codified the Commission on Climate Change and section § 2-1306 of the statute mandates that "the University of Maryland Center for Environmental Science [UMCES] shall establish science-based sea level rise projections for Maryland's coastal areas and update them at least every 5 years." The substantial advances in the science of sea-level rise projections since 2013 make this an opportune time to update projections for Maryland.

The Approach

The process employed to develop the 2013 update proved efficient and effective and will be used again. An Expert Group (listed below) will contribute to and oversee the preparation of a report containing the revised sea-level revised projections. The group consists of some experts who contributed to the 2013 update augmented with additional experts to provide fresh perspectives. A working draft report prepared by UMCES staff under the direction of the Expert Group chair, Dr. Don Boesch, will be provided to the Expert Group at least one week in advance of a one-day work session, to be held on October 11, 2018. The draft will be discussed and modified during the work session and refined by correspondence.

The 2013 sea-level rise projections were based expert judgment on global sea-level rise projections that were included in a 2012 report of a National Research Council committee that focused its analysis on the U.S. West Coast. Since then, the understanding of the trends and causes of sea-level rise has advanced significantly and this has resulted in the development of more refined, probabilistic models of future sea-level rise that take into account the potential greenhouse-gas concentration pathways (RCPs) considered in the Intergovernmental Panel on Climate Change's Fifth Assessment.

The projections included in the working draft will be based on Kopp et al.'s (2014) probabilistic sea-level projections for selected RCPs. This allows a conceptual

coupling of Maryland's emission mitigation commitments and its sea-level rise adaptation efforts. Projections are available for specific tide gauge stations in Maryland, appropriately adjusted for vertical land motion and the fingerprints of polar ice sheet contributions. The utility of these projections has been noted in recent annual reports of the Maryland Commission on Climate Change and they serve as the basis for other recent regional projections for California, Delaware and New York City. In a 2017 paper, the probabilistic projections were computed also to include the contributions to sea level of a potential significant acceleration in the loss of the Antarctic ice-sheet mass before the end of the century. The effect is particularly significant under high emissions scenarios and will shown as an overlay on the conventional projections.

October 11 Work Session

Date/Time: Thursday, October 11, 2018; 10 am to 4 pm

Location: Blue Conference Room
National Socio-Environmental Synthesis Center (SESYNC)
1 Park Place, Suite 300
Annapolis, Maryland 21401

Park Place is located on Westgate Circle at the edge of the historic district; follow these directions. Parking is available in the underground parking garage. Once parked, look for the elevator bank in the "Work" section and proceed to the third floor.

Expert Group Members

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