

The ASCE NOAA Partnership: Opportunities for Advancing Civil Engineering Practice in Cold Regions

Co-conveners:

Dan Walker, Ph.D., A.M. ASCE, past-Chair of ASCE Committee on Adaptation to a Changing Climate and Co-Chair, ASCE NOAA Task Force on Climate Resilience in Civil Engineering Design,

and

Jaci Overbeck, CFM, Alaska Regional Geospatial Coordinator for NOAA Office for Coastal Management



Signatories and witnesses to the signing to the ASCE NOAA Memorandum of Understanding on February 1, 2023, at ASCE Headquarters. From left to right: Bilal Ayyub, U. of Maryland, Ben DeAngelo, NOAA Climate Program Office, Debbie Lee, NOAA Great Lakes Research Laboratory, Rick Spinrad, NOAA Administrator, Maria Lehman, *then* ASCE President, Tom Smith, ASCE Executive Director, Brian Parsons ASCE Director of Sustainability, and Dan Walker, University of Maryland and EA Engineering, Science, and Technology, Inc. (PBC).

On February 1st, 2023, ASCE Executive Director, Tom Smith, and the Undersecretary of Commerce for Oceans and Atmosphere and NOAA Administrator, Rick Spinrad, signed a Memorandum of Understanding (MOU) between ASCE and NOAA formalizing a partnership between the two entities. The purpose of the MOU is thus two-fold:

- 1) Improve cooperation in developing and delivering climate information and services required by civil engineering and allied professionals in order for them to design, build, operate, and maintain climate-resilient infrastructure. And,
- 2) Facilitate ASCE efforts to update its published and educational content to reflect the best available climate information.

The MOU is a manifestation of work carried out by ASCE members and staff as well as NOAA staff under a cooperative agreement established in 2021 to create a boundary organization, housed within the

University of Maryland Center for Technology and Systems Management to promote engagement between ASCE and NOAA. In addition to promoting the development and signing of the ASCE NOAA MOU, the work undertaken through the agreement with the University of Maryland has provided many components of a sustainable working arrangement between ASCE and NOAA, including holding a series of technical workshops, the inaugural *ASCE NOAA Summit on Climate-Ready Infrastructure*, and the creation of the *ASCE NOAA Task Force on Climate Resilience in Civil Engineering Practice* (which is currently overseen by the *ASCE Committee on Adaptation to a Changing Climate*).

To date, the focus of these activities has been to help various ASCE Committees responsible for the creation or updating of ASCE standards or manuals of practice to ensure that these important contributions to civil engineering practice appropriately reflect an understanding of nonstationarity in weather and climate extremes as it may play a role in civil engineering design. Ongoing discussions with members of the authors of *ASCE 7-28 Minimum Design Loads for Buildings and Other Structures*, have led to close coordination with activities of a variety of NOAA offices and programs. For example, three ASCE Institutes (SEI, EWRI, and COPRI) were involved in the launch of NOAA's Industry Proving Ground initiative, which aims to use \$85 million in Infrastructure Reduction Act funding to collaboratively develop and test tailored products and services for the private sector, starting with three key sectors: 1) the retail industry, 2) the risk and reinsurance industry, and 3) architecture and engineering. When fully established the IPG effort will lean heavily on ASCE through the ASCE NOAA MOU to provide authoritative information regarding the needs of the civil engineering community for weather and climate information to be provided by NOAA through NOAA's National Center for Environmental Information.

Recognizing the unique challenges facing communities and civil engineering firms practicing in cold regions due to the effects of climate change, the *ASCE Committee on Adaptation to a Changing Climate* and the *ASCE NOAA Task Force on Climate Resilience in Civil Engineering Practice*, will hold a 90-minute listening session as part of the ICCRE conference to be held in Anchorage, AK, May 13-16. The format envisions would include 20 to 30 minutes of curated presentations from key members of the ASCE NOAA Task Force, to be followed by questions and answers and facilitated engagement of ICCRE attendees. While the ultimate scope of discussion will be determined by session attendees, topics that could be covered include: 1) unique challenges associated with civil engineering practice under changing climate conditions, 2) need for expanded access to relevant geophysical information in the Arctic and adjacent cold regions to support engineering design, and 3) the evolving need for actionable information regarding future conditions under which infrastructure (both traditional and nature-based) will face.