



RESOLUTION
of the
WESTERN STATES WATER COUNCIL
regarding
PROBABLE MAXIMUM PRECIPITATION STANDARDS
Washington, DC
March 14, 2024

WHEREAS, National Probable Maximum Precipitation (PMP) standards for extreme rainfall have long been used for the design and regulation of infrastructure including dams, roads and bridges, as well as thermal power facilities; and are used to promote consistency between federal and state agencies, as well as the private sector professional design community; and

WHEREAS, the National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS) first developed methodologies for estimating PMP standards in the 1940s, using historic data available at that time, and applied them across the United States through hydrologic and hydrometeorological studies and reports between 1961 and 1999; and

WHEREAS, Federal leadership is again needed to update these standards; and

WHEREAS, state dam safety programs have developed statutes, rules and guidance documents for the design of facilities that are typically based on these federal standards and studies; and

WHEREAS, while some states have changed their statutes to allow for the use of new methodologies provided by entities outside the federal government, many state dam and safety programs continue to use these outdated reports and standards, finding the change too difficult to attempt; and

WHEREAS, decades of storm event data (the basis for calculating the standards) have been recorded since the existing standards were published, but these have never been officially updated to include new methods, technologies, and more recent storm data; and

WHEREAS, funding and explicit direction for NOAA to update PMP standards were not included in the FLOODS Act of 2022 (P.L. 117-316); and

WHEREAS, inconsistencies between minimum design criteria of adjacent states and between federal and state design/performance expectations within states are increasing; and

WHEREAS, the Association of State Dam Safety Officials prepared a 2023 report¹ on the number of high hazard potential dams with a rating of less than satisfactory, and the estimated cost to repair or rehabilitate them; and

WHEREAS, consistent and standardized PMPs and modern methodologies are needed for the design and repair of spillways at high-hazard potential dams rated unsatisfactory in order to ensure the highest level of public safety; and

¹ <https://damsafety-prod.s3.amazonaws.com/s3fs-public/files/2023%20ASDSO%20Costs%20of%20Dam%20Rehab%20Report.pdf>

WHEREAS, the 2018 Colorado-New Mexico Regional Extreme Precipitation Study² (REPS) included state-of-the-practice updates to existing methodologies using NOAA research and high-resolution operational tools for prediction of extreme rainfall; and

WHEREAS, the REPS study – reviewed by a board of subject matter experts from numerous federal agencies – demonstrated possible approaches to updating extreme precipitation estimates at a national scale and also included research and recommendations for climate change considerations.

NOW, THEREFORE, BE IT RESOLVED, that the Western States Water Council supports NOAA leading federal efforts toward developing 21st century national PMP standards for estimating extreme rainfall in order to provide consistent requirements for ensuring public safety; and

BE IT FURTHER RESOLVED, that the Western States Water Council recommends Congress address this issue and authorize and fund necessary steps to update federal PMP standards, including a National Academies of Science, Engineering and Medicine (NASEM) study of the current state of the practice and options for extreme rainfall estimation, in order to provide NOAA clear direction toward development of 21st century national standards for estimating extreme rainfall (including PMP).

Revised and Readopted
(see former Position No. 459, March 25, 2021)

² <https://spl.cde.state.co.us/artemis/nrmonos/nr5102p412018internet/>