

## Innovative Flood Mitigation Planning and Modeling to Address Climate Change and Extreme Precipitation

**Dr. Andrew Verdin**

**Hydrologic Scientist**

**Stantec, Minneapolis, MN**

**Wednesday, March 8, 2023 | 11:15 AM | [ECCE 1B41](#) &**

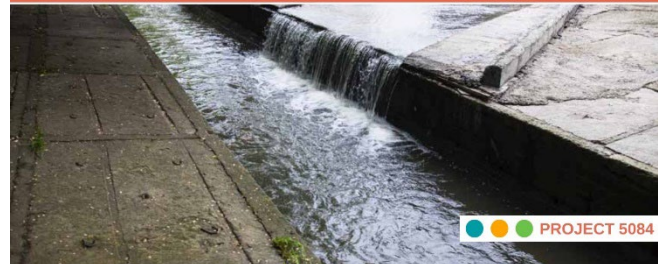
**Zoom: <https://cuboulder.zoom.us/j/98861379124>**

**(passcode: water)**

### Abstract:

Over the last decade, ongoing research from national and international institutes has provided testimonial evidence of the threats municipalities and utilities are facing to existing water resources systems under a changing climate and growing population. A successful utility and flood mitigation management plan will not only require overcoming technical barriers such as modeling and accounting for uncertainty, but also communicating cost and benefits to the public in addition to collaborating across public agencies and government sectors. This presentation provides a summary of the findings of the Water Research Foundation project (#5084), which is focused on developing an informed synthesis document for municipalities and utilities currently facing unprecedented, climate-driven challenges, to help them move toward a more holistic approach to flood mitigation planning and modeling. We provide an overview of existing methods, tools, and strategies for addressing the numerous components that comprise flood mitigation planning and modeling across the United States and Canada. Topics include strategies to effectively communicate the risks and uncertainty surrounding extreme weather events, non-stationarity in the context of global climate model data for quantifying future risk and uncertainty in flood modeling, guiding the selection of models appropriate for application to a variety of scenarios, and existing challenges and knowledge gaps for further research.

**Holistic and Innovative Approaches for Flood Mitigation Planning and Modeling under Extreme Wet Weather Events and Climate Impacts**



**Speaker Bio:** Dr. Andrew Verdin is a Hydrological Specialist at Stantec in the downtown Minneapolis, MN office. He received both his M.S. and Ph.D. in Civil Engineering with a focus on Hydrology & Water Resources from the University of Colorado – Boulder, advised by Dr. Balaji Rajagopalan. As a statistical hydrologist and climate change specialist, he works with utilities to create solutions and develop adaptive management plans to mitigate the impacts of climate change on infrastructure and water systems. He works on a variety of projects with topics that range from: dam safety risk assessments, streamflow simulation and forecasting, hydrologic modeling, stochastic modeling, climate change impact assessments, extreme value analysis, and downstream consequences analysis. He also holds an at-will appointment with the Minnesota Population Center at the University of Minnesota, performing research on climate impacts on human behavior, health, and agricultural in the developing world.