This seminar will reflect on some of the key current questions facing society about water and how knowledge about future weather and climate events may be important for making decisions to deal with these events. This will include a case study describing the development of decision support system for the operation of the facilities of the New York City water supply system that will use hydrologic ensemble forecasts for time horizons ranging from one day to one year. This case study illustrates the importance of weather and climate hindcasts for users to develop and test decision rules. It will include some discussion of the feasibility of developing a global flood warning system. It will consider some of challenges faced by our science community to develop and support skillful and reliable hydrologic ensemble forecast systems. And it will suggest a few opportunities NCAR may have to help improve hydrologic predictions through collaboration with programs such as the WWRP, WCRP and the Hydrologic Ensemble Prediction Experiment (HEPEX).