NOTICE OF INTENT TO AWARD

This notice is not a request for applications. This provides public notice of the Bureau of Reclamation's intention to fund the following project activities without full and open competition.

OPPORTUNITY NUMBER	BOR-LC-19-N017
PROJECT TITLE	Establishing a Framework for Robust Planning in the Colorado River Basin
RECIPIENT	University of Colorado, Boulder
ANTICIPATED FEDERAL AMOUNT	$230,463
STATUTORY AUTHORITY	Section 9509, Omnibus Public Lands Management Act of 2009, (Public Law 111-11)
CFDA NUMBER	15.560 – SECURE Water Act – Research Agreements
RECLAMATION POINT OF CONTACT	Leslie Dieguez, ldieguez@usbr.gov
SUMMARY OF PROJECT ACTIVITIES	Through this grant, the researchers from the University of Colorado Boulder will work with Reclamation to explore a modeling and analytical process that incorporates multiple advanced technological and conceptual elements to potentially support renegotiation of the Interim Guidelines. The components include: employing an optimization technology to efficiently identify potential Interim Guidelines alternatives that balance multiple performance objectives; evaluating alternatives across a wide range of future Colorado River Basin (CRB) conditions; using statistical methods to determine conditions that are likely to cause the CRB system to be vulnerable to negative outcomes; establishing processes to learn ways to mitigate the vulnerabilities; and developing interactive tools to facilitate productive engagement with the results. This work will build on a previous Reclamation grant that demonstrated the technical feasibility of the optimization and the relevance of several performance and robustness concepts that are part of this new study. The scope covers the following four phases that will be undertaken over the entire course of the project: • Phase 1: Literature Review of Advancements in Many Objective Robust Decision Making and Robustness Calculations • Phase 2: Uncertainty Characterization • Phase 3: Robustness Evaluation • Phase 4: Vulnerability Analysis
SELECTION JUSTIFICATION	The Principle Investigators (PIs) of this project are uniquely qualified based on two factors: technical expertise and location. Both PIs are experts in using advanced technical tools to address complex water resources planning contexts. Dr. Zagona was the original developer of the RiverWare software used for Reclamation's Colorado River Simulation System (CRSS) model, and has been involved in the development of the model and its use in multiple planning contexts over the last 20 years. Dr. Kasprzyk has developed the robust planning process proposed in this project over the course of 10 years of his own research and research he directed with students. The most relevant example of this is the

	Reclamation-funded research project he led along with Dr. Zagona that piloted the optimization aspect of the broader robust framework to be explored in this proposed project. That project was completed at the end of 2018 and this proposed project is designed as the next step on this research path. The PIs are also uniquely qualified because of their proximity to Reclamation employees stationed at the Center for Advanced Decision Support for Water and Environmental Systems (CADSWES). The research being performed will be heavily supported by Reclamation employees at CADSWES so the ability of the student and the PIs to easily interact with Reclamation is critical to the success of the study.