

Informing the Development of a Sustainable Water Management Plan for the ACF River Basin

Martin Kistenmacher and Aris P. Georgakakos

Affiliation: Georgia Water Resources Institute, School of Civil and Environmental Engineering, Georgia Institute of Technology

Reference: McDowell RJ, CA Pruitt, RA Bahn (eds.), *Proceedings of the 2015 Georgia Water Resources Conference*, April 28-29, 2015, University of Georgia, Athens.

Abstract. The ACF Stakeholders (ACFS) is a 503(c) nonprofit organization with membership from 56 river basin stakeholder groups in Georgia, Alabama, and Florida. For the past few years, ACFS has been undergoing a comprehensive consensus building process to reconcile the various special water-related interests in the Apalachicola-Chattahoochee-Flint river basin and develop a shared vision plan. The Georgia Water Resources Institute (GWRI) has been engaged to develop various modeling tools, carry out comprehensive assessments, and inform the planning process toward developing a consensus management plan. This article describes the technical process and tools developed to support the stakeholder information needs. These activities included comprehensive surveys of individual stakeholders' interests and performance evaluation metrics, development of different modeling tools (e.g., ACFDSS, ResSim, hydrologic models, hydro-dynamic models) to evaluate a host of water management alternatives (WMAs), development of post-processing tools to interpret complex technical information into stakeholder-meaningful findings and conclusions, and multiple workshops with each stakeholder caucus and the ACFS as a whole. The technical assessments considered many potentially promising water management alternatives including making adjustments to in-stream and off-stream water uses; power generation management policies, reservoir coordination strategies, and modifications to the existing water infrastructure. Throughout this process, model results were analyzed and presented to highlight the effects of different WMAs on a wide range of performance metrics representing individual stakeholder preferences. Several rounds of modeling were conducted to help stakeholders appreciate the implications of the current operations, evaluate trade-offs among several key water uses, and identify the most promising WMAs included in the ACFS recommendations to the United States Army Corps of Engineers and the riparian states.