

Developing a HEC-ResSim Model in the Ocmulgee-Oconee-Altamaha River Basin

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Abstract. In a large and complicated river basin, understanding the delicate balance between hydrologic conditions, water withdrawal and discharges of reclaimed water, and any substantial operations of storage facilities is essential in informing decision-makers in a regulatory review process. In river basins with substantial amount of storage and subsequent flow regulation, reservoir simulation models (e.g. HEC-ResSim) are used to obtain this understanding. The Ocmulgee-Oconee-Altamaha River Basin (OOA Basin) had not had a basin-wide water resources model before the State of Georgias Regional Water Planning effort in 2009. In this study, a HEC-ResSim model was developed for the OOA Basin where three large Georgia Power hydropower projects are located. This model utilized unimpaired Flow (UIF), recorded water use data, other hydrologic data developed earlier, and project data provided by Georgia Power. Preliminary modeling results showed good verification with observed historical flow and lake elevation. Upon completion, this model can be used for cumulative impact analyses in the OOA Basin.