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**A DYNAMIC SIMULATION MODEL FOR INTEGRATED
WATER RESOURCES MANAGEMENT IN ALBUQUERQUE, NM**

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ABSTRACT: Water supply limitations in the context of a vibrant growing community led the Albuquerque Bernalillo County Water Utility Authority (Authority) to develop a long-term Water Resources Strategy with the goal of obtaining and maintaining a sustainable supply. Given the interconnected relationship of current and future water resources, integrated management tools are needed to achieve optimal long-term performance. To meet this objective, INTERA and CH2MHill were retained to develop a dynamic simulation model of Water Authority resources which include both supply and demand components. The Authority supply portfolio includes surface- and groundwater supplies, each constrained by a variety of permit conditions. In addition, the Water Authority sought to evaluate potential future water-management alternatives such as ASR, as well as future potential sources such as recycled water. The model allows the user to combine various supply and demand management options into “portfolios” allowing comparison and evaluation of an array of options. In addition, the model facilitates short-term forecasting for the purpose of, for example, developing the Water Authority Annual Operating Plan. Future water demands can be examined through variation of population trends, efficiency, and use categories. These options allow the user to explore different customer profiles and behaviors, and how those may affect demand (and supply) in the future. Additionally, the model includes the ability to evaluate potential effects of climate change on both supply and demand. In summary, the dynamic simulation model provides a robust planning tool for the Authority to evaluate plausible future scenarios and their relative feasibility.

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