

Utility Climate Resiliency Study for the MNGWPD

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Abstract. CDM Smith is working with the Metropolitan North Georgia Water Planning District (MNGWPD) to assess the potential impacts of climate variability on water resources and infrastructure within the 15-county planning region. A series of future climate scenarios were developed that represent discrete plausible future conditions, but which are not considered to be forecasts. Utilizing a standard range of global climate model projection data sets, five discrete scenarios were developed representing the central tendency as well as outer quartiles categorized as: hot/dry, hot/wet, warm/wet, and warm/dry. Data from all the model projections residing within a given quartile were pooled to create the five scenarios. This provided a broad but practical number of scenarios for subsequent analysis while not requiring a subjective selection of a single model projection. The “hybrid delta ensemble” method was then utilized to adjust the historical climate records to reflect the five future climate scenarios. Using this method statistical adjustments were made to the historical observed data in a way that preserves the seasonal patterns of variability. A sixth future climate scenario was then developed by extending statistical trends observed in the historical data. Utilizing the developed climate scenarios, a vulnerability analysis was performed for impacts to water supply, water demand, water quality, watersheds, and infrastructure. Output from these various analyses included potential climate related impacts to firm and average yields of water supply reservoirs, water demand, regulatory low flows and implications for wastewater discharge permitting, flood frequency and stream peak flows, water quality, and infrastructure vulnerabilities. Following the identification of vulnerabilities, a suite of potential adaptive strategies will be identified as well as a high level assessment of both potential benefits and negative impacts from implementing the adaptation measures. The final component of the study includes development of a list of recommended future work tasks for the District or individual government/utilities to address climate resiliency.