

A Real-time Common Operating Picture for Managing Water Observations, Operations, and Diversions

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Abstract. During the summer of 2011, Texas experienced the hottest summer ever recorded by any state in the U.S. The extreme temperatures coupled with record low precipitation resulted in the largest drop in the state's reservoirs. The unprecedented drought has raised numerous questions and concerns regarding the state's vulnerability and capacity to adequately respond to the current water situation. Representatives from water agencies and academic institutions across the state have created the Drought Technology Steering Committee to leverage the best available data, models and science to better understand the state's current and future water levels. This initiative has mobilized many of the state's resources to help support the synthesis and integration of both geospatial and temporal water information. This includes not only observation data collected at physical gauges but also satellite based water storage measurements calculated by GRACE, soil moisture levels output by NLDAS and streamflow calculations computed by large scale river routing models such as RAPID. In April of 2012, WaterML2 officially became the international standard for exchanging water observations data via the web. Using water web services, it is now possible to synthesize copious amounts of information available across disparate observation networks. This paper presents a web based common operating picture that supports the management of water operations within the San Antonio and Guadalupe River basin in Texas. Furthermore, this paper will be presented within a global context where recent initiatives such as World Water Online have begun to construct the framework for developing a distributed global water information system that connects people to water data, models and maps everywhere.

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