ASSESSING DROUGHT THREAT FOR URBAN WATER PLANS

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ABSTRACT

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Urban water planners tend to overestimate future urban water needs while employing the rationale that some margin of safety is needed to mitigate the risk of drought. However, that may prove to be a false sense of security if the risk of drought is not well understood. An alternative assessment of drought threat based upon historical stream-flow records is offered to better quantify the level of security desired. A drought threat assessment supplements standard cost-effectiveness analysis when more comprehensive socioeconomic, cost-benefit analysis is unavailable or inconclusive. Using recent studies of the long-term needs of the city of Fargo, North Dakota, a drought threat assessment concludes that existing water resources should be sufficient until 2040. Furthermore, the assessment compares a range of water conservation measures that might extend existing water resources through 2050 more cost effectively than the inter-basin water transfer proposals currently under consideration.