

# EXECUTIVE SUMMARY



## Water for 2060 Efficiency Analyses

### Strategies for Long-Term Water Supply Reliability and Efficiency

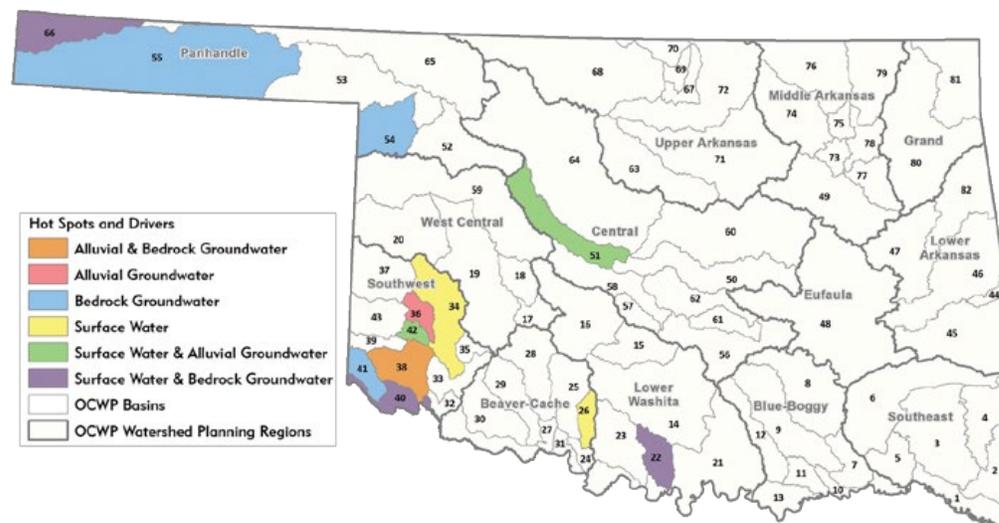
Oklahoma's Water for 2060 Act set an ambitious statewide goal of consuming no more fresh water in 2060 than was consumed in 2012, while continuing to grow the state's population and economy. Toward this goal, the Oklahoma Water Resources Board (OWRB) is promoting water efficiency in partnership with the U.S. Army Corps of Engineers (USACE) through a series of Water for 2060 activities, with an emphasis on potential means of alleviating the water shortages projected in the 2012 Update of the Oklahoma Comprehensive Water Plan (OCWP). Water efficiency, conservation, recycling, and reuse – the cornerstones of Water for 2060 – were among the Priority Recommendations of the OCWP.

Analyses of local-level efficiency measures were conducted to assess how they could mitigate future supply shortages and reduce fresh water use in basins across Oklahoma, building reliability and efficiency into Oklahomans' water supplies. Three strategies were investigated at a basin-level and local level in some of the OCWP-designated "hot spot" basins – those projected to have the most significant future supply challenges – as a demonstration of these strategies for water users statewide:

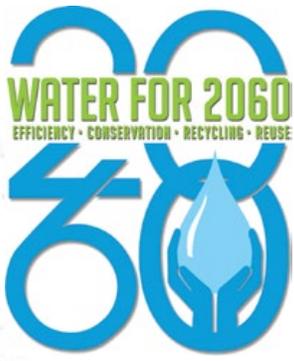
- Water conservation
- Use of marginal quality water supplies, and
- Public water supply system regionalization strategies.

Consistent with the intent of the Water for 2060 Act, the strategies assessed are completely voluntary, and provided for the communities' informational benefit only. There is no state requirement for the communities discussed in this analysis, or any other community, to implement the programs and recommendations contemplated in this document.

The results of the Water for 2060 Efficiency Analyses are described in a series of Fact Sheets and Technical Memoranda. The Fact Sheets provide an at-a-glance summary of results, while the Technical Memoranda explore the details of the analyses in depth. Technical Memorandum No. 1 describes the process employed to determine the basins selected for the various analyses, which was also supported by a series of public meetings in the Hot Spot basin regions in 2014.



*Twelve Hot Spot Basins designated in the 2012 Oklahoma Comprehensive Water Plan Update.*



## Water Conservation

Reducing our use is one of the most effective – and one of the most cost-effective – ways we can address our long-term water supply needs. The costs and effectiveness of additional conservation measures and programs were evaluated at the local level in OCWP Basin 26 in southern Oklahoma. Participating public water supply systems included the City of Duncan, the City of Comanche, and the Stephens County Rural Water District #3. Fact sheets summarizing additional conservation measures and programs that each water provider determined could be implemented in their system are provided for each of these public water suppliers. Details of the analyses are included in Technical Memorandum No. 2. The results showed that even a small reduction in basin-level water demands can have a dramatic effect in reducing potential future water supply shortages.

## Marginal Quality Water

The OCWP identified multiple sources of water that are not traditionally tapped to meet our needs. The Water for 2060 Marginal Quality Water (MQW) analyses focused in on the use of recycled water from municipal water reclamation facilities to meet non-potable (primarily irrigation) needs in the community. Three communities were analyzed in Basin 51 along the North Canadian River upstream of the Oklahoma City metro area, including Yukon, El Reno, and Watonga. The analyses demonstrated the potential to significantly offset fresh water use through use of non-potable water for irrigation, as summarized in the MQW Fact Sheets for these three communities. Technical Memorandum No. 3 provides details of the analyses, and it explores other MQW opportunities in the basin, such as brackish water desalination, use of alluvial groundwater with high nitrate concentrations, and potable water reuse.

## Regionalization

The Water for 2060 Efficiency Analyses investigated regionalization opportunities in the OCWP Southwest Watershed Planning Region associated with physical interconnections between existing providers' systems to achieve water supply benefits. This in turn can add diversity to each interconnected provider's supply portfolio and facilitate sharing of supplies and treatment facilities, offering additional reliability and efficiencies in infrastructure and operations. The Southwest Region already has numerous systems that are interconnected with one another, under the terms of intergovernmental agreements between the public water supply providers. However, reliably meeting water needs remains challenging in southwest Oklahoma, particularly under extended drought conditions such as those experienced in 2011 through early 2014. Fact sheets for several water providers in the region were developed to summarize potential opportunities to build in additional interconnections in southwest Oklahoma. Potential reservoir sites that were identified during the OCWP analyses are also noted as possible long-term regional water sources. Technical Memorandum No. 4 details the specifics of the analyses.